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FROM

W. T. Walsh

March 21, 1902.

⑦ Commonwealth of Massachusetts, Supreme Judicial Court.

Hampden, ss.

HOLYOKE WATER POWER COMPANY,

PETITIONER,

v.

CITY OF HOLYOKE.

BEFORE

EVERETT C. BUMPUS, JAMES E. COTTER, AND
EDMUND K. TURNER,

Commissioners appointed by the Supreme Judicial Court.

APPEARANCES:

For Petitioner: FRANK P. GOULDING AND WILLIAM H. BROOKS.

For Respondent: NATHAN MATTHEWS, JR., AND A. L. GREEN.

VOL. I.

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R. J. Walsh

STENOGRAPHIC REPORT

BY

FRANK H. BURT, F. G. MORRIS, WM. L. HASKEL, W. C. GRAHAM, AND E. L. DAVIS.

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HOLYOKE WATER POWER COMPANY,

PETITIONER,

v.

CITY OF HOLYOKE.

FIRST HEARING.

SPRINGFIELD, Wednesday, April 5, 1899.

The Commissioners appointed by the Supreme Judicial Court upon the above entitled petition met in the Hampden County Court House at 2 P.M.

Present: Mr. Goulding and Mr. Brooks for the petitioner; Mr. Matthews and Mr. Green for the respondent.

Mr. BROOKS. Gentlemen of the Commission, the petition in this case is as follows:—

To the Honorable Justices of the Supreme Judicial Court, sitting at Springfield, within and for the County of Hampden:

Respectfully represents your petitioner, the Holyoke Water Power Company, that it is a corporation duly established in Holyoke in said County; that it now owns and operates and has for several years owned and operated plants in said Holyoke for the manufacture, generation, and distribution of gas and electricity for sale for lighting purposes, and is now, and for several years last past has been, engaged in the business of making, generating, and distributing gas and electricity for sale for lighting purposes; that the number of said plants is two, one gas plant and one electric plant; that said plants, and the property suitable and used for such business in connection therewith, lie within the limits of said City of Holyoke; that your petitioner was the owner of said property, and was engaged in said business at the time of the first vote of the City of Holyoke hereinafter referred to; that a vote that it was expedient to exercise

the authority conferred in Section 1 of Chapter 370 of the Acts of the year 1891, and in any Acts amendatory thereof, duly passed each branch of the City Council of said Holyoke, by a two-thirds vote in each of two consecutive municipal years,—to wit, in the years 1896 and 1897,—and thereafter were duly ratified by a majority of the voters present and voting thereon at an annual municipal election; that afterwards, in pursuance of a written request therefor, authorized by the City Council and made by the Mayor of said City, and within thirty days after the passage of the final vote whereby said City decided to establish a plant, a detailed schedule describing all the property and plants, as aforesaid, of your petitioner, then existing, which it is proposed to sell to said City, with the terms of sale proposed therefor, was duly made and filed with the City Clerk of said Holyoke, by your petitioner, desiring to enforce the obligation of said City to purchase such plant and property; that the date of such filing was Jan. 8, 1898; that the parties failed to agree as to what shall be sold and what the terms of sale and delivery in accordance with the provisions of law in such case made and provided, shall be; that the acts and requirements necessary before the filing of this petition have been performed by each of the parties.

Wherefore, your petitioner respectfully prays an adjudication between the parties, and the appointment of a Special Commissioner or Commissioners, who shall give the parties an opportunity to be heard and shall thereafter adjudicate what property real and personal, including rights and easements, shall be sold by your petitioner and purchased by said City in accordance with the provisions of said Chapter 370 of the Acts of the year 1891, and the Acts amendatory thereof and additional thereto, and what the price, time, and other conditions of the sale and delivery of said property shall be, and such other things as may be required or permitted by law.

HOLYOKE WATER POWER COMPANY,

By EDWARD S. WATERS, *Treasurer.*

HAMPDEN, SS.

Filed March 5, 1898.

Attest : CHRISTINE LAW, *Asst. Clerk.*

And then there was the order made by Mr. Justice Knowlton thereon : —

On the foregoing petition let an order of notice to the respondent be issued returnable at the Court House in Springfield on the fourth Tuesday of April next.

MARCUS P. KNOWLTON, *J. S. J. C.*

March 5, 1898.

COMMONWEALTH OF MASSACHUSETTS.

SUPREME JUDICIAL COURT.

HAMPDEN, SS.

AT SPRINGFIELD, March 5, A.D. 1898.

On the petition aforesaid it is ordered that the petitioner notify the said City of Holyoke to appear before the Justices of the Supreme Judicial Court at the Court House, in Springfield, in said County, on the fourth Tuesday of April next, by causing it to be served with an attested copy of said petition and this order thirty days at least before said fourth Tuesday of April, that it may then and there show cause why the prayer of said petition should not be granted.

By order of Hon. Marcus P. Knowlton, Justice.

Attest : ROBERT O. MORRIS, *Clerk.*

HAMPDEN, SS.

CITY OF HOLYOKE, March 7, A.D. 1898.

By virtue of the within precept I this day notified the City of Holyoke to appear before the Justices of the Supreme Judicial Court as within directed, by delivering in hand to Pierre Bonvouloir, its treasurer, and Edward A. Kane, its clerk, true and attested copies of the within petition and order of notice thereon.

S. T. MILLER, *Deputy Sheriff.*

To that petition the following answer was made :—

COMMONWEALTH OF MASSACHUSETTS.

SUPREME JUDICIAL COURT.

HAMPDEN, SS.

HOLYOKE WATER POWER COMPANY, (PETITIONER FOR
APPOINTMENT OF COMMISSION)

v.

CITY OF HOLYOKE.

ANSWER OF THE RESPONDENT.

And now comes the City of Holyoke, and admits that the petitioner in the above-named petition is a corporation duly established in Holyoke ; that it now owns and operates and has for several years owned and operated plants in said Holyoke for the manufacture, generation, and distribution of gas and electricity for sale for lighting purposes, and is now, and for several years last past has been, engaged in the business of making, generating, and distributing gas and electricity for sale for lighting purposes ; that the number of plants is two, one gas plant and one electric plant ; that said plants, and the property used in connection therewith, as alleged in said petition, lie within the limits of said city ; that said petitioner was the owner of said property at the time of the first vote of the City of Holyoke ; that it was expedient to exercise the authority conferred in section one of chapter three hundred and seventy of the acts of the year 1891, and in any acts amendatory thereof ; that the other votes alleged in said petition were passed by each branch of the City Council and the voters of said Holyoke in the manner and at the times alleged in said petition ; that a detailed schedule describing all the property and the plants of the petitioner which it is proposed to sell to said City, with the terms of sale proposed therefor, was duly filed with the City Clerk of said Holyoke at the time alleged in said petition ; that the parties have failed to agree as to what shall be sold and what the terms of sale and delivery in accordance with the provisions of law in such case made and provided shall be ; and that

the acts and requirements necessary before the filing of this petition have been performed by each of the parties.

And the respondent joins in the petitioner's prayer for an adjudication between the parties, the appointment of a special commissioner or commissioners, and the other things set forth in the prayer of the petitioner.

CITY OF HOLYOKE,

By C. T. CALLAHAN,
City Solicitor.

Filed May 4, 1898.

The appointment of the Commissioners was filed May 13, 1898.

COMMONWEALTH OF MASSACHUSETTS.

SUPREME JUDICIAL COURT.

HAMPDEN, ss.
No. 19.

THE HOLYOKE WATER POWER COMPANY

v.

THE CITY OF HOLYOKE.

This petition came on to be heard before me, upon an application made by both parties to appoint commissioners pursuant to the thirteenth section of chapter three hundred and seventy of the Acts of the year 1891, entitled "An Act to enable cities and towns to manufacture and distribute gas and electricity," and to the Acts in amendment thereof, the counsel of both parties agreeing that three commissioners should be appointed under said section of the statute; and thereupon, after giving both parties an opportunity to be heard, upon consideration thereof it is ordered that Everett C. Bumpus, Esq., of Quincy in said Commonwealth, an attorney-at-law, James E. Cotter, Esq., of Hyde Park in said Commonwealth, an attorney-at-law, and Edmund K. Turner, Esq., of Marblehead in said Commonwealth, but having a place of business in Boston in said

Commonwealth, civil engineer, be appointed commissioners, in pursuance of said section of said chapter 370 of the Acts of 1891, and the Acts in amendment thereof, who, after giving the parties an opportunity to be heard, shall adjudicate what property of the petitioner, real or personal, including rights and easements, shall be sold by the petitioner and purchased by the respondent in accordance with the provisions of said Act of the year 1891 and the Acts in amendment thereof, and what the price, time, and other conditions of the sale and delivery thereof shall be,—said commissioners to file their award in the Supreme Judicial Court for revision or confirmation by said Court.

W. A. FIELD, *C. J. S. J. Ct.*

May 12, 1898.

OPENING STATEMENT FOR THE PETITIONER.

BY WILLIAM H. BROOKS, ESQ.

GENTLEMEN OF THE COMMISSION :

My opening statement in behalf of the petitioner will be as brief and succinct as is warranted by the large interests here involved, and as is consistent with a proper understanding of the cause which now comes on to be heard before this honorable Commission, and of the various contentions made under the law and upon the facts by this petitioner. And it may be well for us for a few passing moments to consider what the law is, as we, counsel for the petitioners, understand it to be as applied to the case, and the facts which it becomes the province of you gentlemen to determine. The statute of 1891, chapter 370, as amended by the Act of 1893, chapter 454, provides for the municipalization, if I may so express it, by a city or town, of the gas or electric light plants within its borders, either one or both. It is a new statute, anomalous, may it please your Honors, in its terms, somewhat contradictory in its verbiage, upon first reading. I find it so upon more than the first reading. No case has yet come before our Court of final legal interpretation for an expression of opinion on the various questions that may be involved in these two statutes, the original and the amendatory. I say they seem to be somewhat contradictory at first blush. But I think that, upon investigation, careful reading, considerable study, we are enabled to obtain what the real intention of the legislature was, which in its wisdom saw fit to enact such legislation. There seems to be some little difficulty, perhaps, in obtaining a cohesion, if that is a proper expression, of the various parts. But I think that diligent application eases the situation. We say that this statute in effect is compulsory, if it is not so in terms. That is, the statute provides that a city, after going through

certain preliminary steps, may take the final step of going into the electric light and gas business. If there happen to be electric light and gas plants owned by private individuals or corporations, and they, under the stress, feel it desirable — in fact, we may say compulsory — to sell to the City, they can offer so to do; and the City, if it cannot or does not agree to the terms offered, are obliged to take these plants at a valuation to be fixed by a commissioner or commissioners appointed by our Supreme Judicial Court. I do not think that I need in my opening, unless it shall be desired by your Honors, to go into a consideration of the preliminary steps, because, as we understand it, the answer of the respondent admits that all the preliminary prerequisites have been fully and amply and legally complied with. Then we naturally come to the question, perhaps first, what does the word “plant” mean, because the word “plant” is used in both these acts very frequently. Section 1, chapter 370, of the Acts of 1891, has not been changed or amended in any way; and I think that from the language of that section we find what the term “plant” means and what it does include; and I will therefore read it:—

Any city or town may, under the limitations of this act, construct, purchase, lease, or establish, and maintain within its limits one or more plants for the manufacture or distribution of gas or electricity for furnishing light for municipal use, and for the use of such of its inhabitants as may require and pay for the same as herein provided. Such plants may include suitable land, structures, easements, water privileges, stations, gasometers, boilers, engines, dynamos, tools, machinery, pipes, conduits, poles, conductors, burners, lamps, and other apparatus and appliances for making, generating, distributing, and using gas or electricity for lighting purposes.

Our contention is that this statute means, in connection with the other sections that follow, that whatever may have been used in the electrical lighting or gas business, if existing at the time when the City proposed to assume ownership, are parts of one plant.

We say, under this statute, that there can be no final sale,

that there can be no legal sale, until a final determination of the case,—no completed purchase; and that may become material upon the question as to when your Honors shall say the market value of these plants is to be ascertained, whether now, or when some vote was passed, or when you come to render your decision in this matter.

Now we say that the whole of the plants are to be taken; and I would like to refer your Honors to the Act of 1893, chapter 454, section 5, as I have it minuted.

Such city or town shall purchase as herein provided the whole of such plant and property used in connection therewith lying within its limits.

And we say that, notwithstanding section 13 of the Acts of 1891, chapter 370, which contains this language:—

And thereafter such court or justice shall, after giving both parties an opportunity to be heard, appoint a special commissioner or commissioners, who shall give the parties an opportunity to be heard, and shall thereafter adjudicate what property, real or personal, including rights and easements, shall be sold by the one and purchased by the other, in accordance with the provisions of this act.

The whole of both of these plants is to be taken by the City at a price to be ascertained and fixed by this Commission. Now we say that that last clause of the statute of 1891, to which I have adverted, means simply this: that you shall determine what of the property that has been recently added the City shall take. By "recently added" I mean since the passage of the votes which gave them the right to municipalization; and also what supplies the City shall take. Because the statute provides that the City shall take the additions that have been made since the passage of their votes for municipalization, unless the parts added shall be extravagant and of no considerable utility to the City. It also provides, as I understand the law, that you may determine what supplies that are on hand they shall take. So that I say again, notwithstand-

ing section 13 of chapter 370 of the Acts of 1891, the City is to take the entire two plants.

You are to decide, as we understand the law, what the City shall pay for the property comprehended by that schedule or statement which was filed with the City within thirty days from the time of the passage of the final vote; and there is nothing in the schedule, we shall show, that is not a part and parcel of one or the other of these two plants. So that, under our view, the question for your Honors to determine is simply the question of value for each of these two properties, gas and electric light, because the respondent's answer admits that all the preliminary prerequisites have been complied with.

Now what rule of law shall be applied here to the ascertainment of the market value of these properties? The statute of 1893, chapter 454, section 5, provides:—

Such city or town shall purchase as herein provided the whole of such plant and property used in connection therewith lying within its limits, and the price to be paid therefor shall be its fair market value for the purposes of its use; no portion of such plant to be estimated, however, at less than its fair market value for any other purpose, including as an element of value any locations, or similar rights, acquired from private persons in connection therewith.

So our contention is that a true interpretation of the law as it stands on the statute books is that your Honors shall fix, as the money to be paid by the City of Holyoke to the Holyoke Water Power Company, a sum that shall include the fair market value of these two properties for the purpose for which they are now and have been maintained or used, and for any other purpose they may be put to. You have a right to consider both phases of the situation.

By section 5 of chapter 454 of the Acts of 1893 certain verbiage was stricken out from section 12 of chapter 370 of the Acts of the year 1891, to which I wish to call the attention of the Commissioners for a moment.

I will read that part of the Act of 1891, section 12, that I consider pertinent to the immediate present discussion:—

And the price to be paid therefor [meaning both and each of these plants] shall be its fair market value for the purposes of its use, no portion of such plant to be estimated, however, at less than its fair market value for any other purpose, including as an element of value the earning capacity of such plant based upon the actual earnings being derived from such use at the time of the final vote of such city or town to establish a plant.

This phrase or this sentence, "including as an element of value the earning capacity of such plant based upon the actual earnings being derived from such use at the time of the final vote of such city or town to establish a plant," is eliminated by section 5 of chapter 454 of the Acts of 1893. We say it was eliminated because for one reason it added nothing to the term "market value,"—in other words, that it was surplusage. For, as I understand the law, in this Commonwealth, for many years the question of market value could be determined upon evidence of what the income or earnings of the property were. And, if this could not be done, it would be an enormous hardship, we claim, because no property, no stocks or bonds or tenement buildings or factories, are bought or sold unless the fair market value thereof is ascertained by the answer to the question: What does this property earn, or, properly managed, what income ought it to pay? What net income does the vendor derive from it? So we say that the excluded phrase or sentence added no force in itself to the question of market value, except perhaps that part of it which fixes the time that the actual earnings might be taken into consideration. "Based upon the actual earnings being derived from such use at the time of the final vote of said city." That is all stricken out, leaving it, as I have already read to you, "fair market value." And, very properly, they struck out that part which alludes to the earnings at the time of the passing of the final vote. Perhaps—and I think your Honors may well so say—one of the intents of the legislature in making the amendment was to wipe out not only what was unnecessary, what was surplusage, but also to wipe out any question of

time there, so that it may bring the earnings down to the time of the hearing of the case or of your Honors' decision therein. Because it is readily conceivable that a property might vary considerably in value, either higher or lower, from the time of the passage of the final vote until the time of the final decision. And some time has elapsed here, as your Honors notice, — more than a year since the final vote of municipalization was passed by the City of Holyoke. Present earnings are always considered upon the question of market value. We have a right to introduce evidence of what the present earnings of the property are. Perhaps you need not say that it is an element of value; but it is evidence, we contend, of fair market value, and always admitted.

Farther along in section 5 of the amendatory act, and also of the original act, section 12, there is this further clause which stands unchanged, as I have already suggested, in the amendatory act :—

Such value shall be estimated without enhancement on account of future earning capacity, or good will, or of exclusive privileges derived from rights in the public streets.

So that at some time it will become a question for your Honors' determination — I have no doubt it will — as to what really means the phrase "future earning capacity." We say that that does not exclude your Honors from a consideration of the probable future use of these plants as bearing upon present value; does not exclude the adaptability of these properties for future use; does not exclude your consideration of the present capacity of these plants for future use; does not exclude present opportunity for extension and, to use a familiar word, "expansion." We say that your Honors have the right and it is your duty to consider the present condition of that plant with reference to future uses. Otherwise, we say that, if any other interpretation were placed upon this statute, such interpretation would be unconstitutional; and, if necessary, we can call to your Honors' attention many decisions upon the

matter in point. So that we have not only the right to consider the structural values of these two properties, their present earning capacity, whether earning capacity of to-day or this year or the year before, but also have a right to consider what the probable future use of these properties may be and how they are fitted for such probable future use. You have the right to consider their adaptability for future calls upon them, for future service that may be demanded of them, for product that they may be called upon to produce in the future.

So, then, we say that the statute fixes on what basis the fair market value is to be determined,—fixes by its silence as to what time that market value is to be determined. And I have only to suggest in that connection again that, when there is a price fixed and a delivery of the property, then there is a sale within the meaning of the statute, and not before.

Now the City, under this statute of 1893, chapter 454, section 6, gains all the power that the Holyoke Water Power Company had with reference to these plants. Section 6 of the amendatory act reads as follows:—

When any city or town shall acquire, under the provisions of this act or of said chapter, a plant theretofore used for the manufacture or distribution of gas or electricity for the purposes of heating or power, it may continue to use the same for such purposes.

So we shall show your Honors that we have the power, if it is denied, to use these plants for lighting and heating and for the distribution of power. We say that the market value is to be applied upon the basis of the uses which we have had of these plants, and which the city may have as our successors, and for any other uses or purposes to which they may be applied.

Now we say, of course, that the market value of anything, any factory or tenement building, almost anything conceivable, depends largely upon the income to be derived therefrom, upon its ability to earn. It goes beyond the mere structural value; and in a factory it is the moving unit,—as I think Mr. Justice Holmes expressed it, “the moving concern or entity.”

The machinery, the buildings, and the land, as I understand the law, are not to be considered separate and apart from each other; but they are to be considered as the component parts of one unit, moving, operating, producing. That is what we say here. The market value of these concerns is to be based upon the theory, if that theory is substantiated by the evidence, that they are moving, producing, profitably producing concerns. And whether or not one machine may be taken out and sold for second-hand machinery, and, being considered second-hand machinery, obtain only a second-hand machinery price, we say has no application here, because these machines are the component parts of one great whole. They are in motion, producing, and producing profitably. They are to be considered, for the ascertainment of their market value in the places where they are, doing what they are doing, in connection, if you please, with the buildings in which and the land upon which they are. I will read your Honors the entire section 5 of chapter 454 of the Acts of 1893, which is amendatory of section 12 of chapter 370 of the Acts of 1891.

Section twelve of said chapter 370 is hereby amended by striking out in lines 31 to 34 of said section, inclusive, the words "the earning capacity of such plant based upon the actual earnings being derived from such use at the time of the final vote of such city or town to establish a plant and also," and inserting in line 37 thereof, after the word "town," the words:—unless it shall refuse or neglect to purchase the same,—and striking out in lines 48 to 55, inclusive, the words "When any capital has been paid in in property instead of in cash the valuation placed upon such property in estimating it as paid-in capital shall not be conclusive in estimating its value under the foregoing provisions, but may be disputed by a city or town, and if shown to have been excessive may be reduced by the authority fixing the price of the plant and property as hereinafter provided," and adding at the end of said section the words: No city or town shall be obliged to buy any property added to a plant unnecessarily after the passage of its first vote that it is expedient to exercise the authority conferred in section 1, nor any property except such as shall be suitable for the ordinary business of the vendor which the city or town may assume; and if any property or plant which the city or town

shall be entitled or obliged to buy under this act will not be available to the city or town if purchased, by reason of liens, interests of third parties, private contracts or other cause, whereby the city or town purchasing would be at a disadvantage in the use of the same as compared with the vendor, the city or town may be released from buying the same, or a discount may be made from the price to be paid for the plant, as the commissioner or commissioners provided for in section 13 shall determine to be equitable under the circumstances,—so as to read as follows: Section 12. When any city or town shall decide as hereinbefore provided to establish a plant, and any person, firm, or corporation, shall at the time of the first vote required for such decision be engaged in the business of making, generating, or distributing gas or electricity for sale for lighting purposes in such city or town, such city or town shall, if such person, firm, or corporation shall elect to sell and shall comply with the provisions of this act, purchase of such person, firm, or corporation before establishing a public plant, such portion of his, their, or its gas or electric plant and property suitable and used for such business in connection therewith, as lies within the limits of such city or town. If in such city or town a single corporation owns or operates both a gas plant and an electric plant, such purchase shall include both of such plants; but otherwise such city or town shall only be obliged to purchase the existing gas plant or plants if it has voted only to establish a gas plant, and shall only be obliged to purchase the existing electric plant or plants if it has only voted to establish an electric plant. If the main gas works, in the case of a gas plant, or the central lighting station, in the case of an electric light plant, lie within the limits of the city or town which has voted to establish a plant as aforesaid, such city or town shall purchase as herein provided the whole of such plant and property used in connection therewith lying within its limits, and the price to be paid therefor shall be its fair market value for the purposes of its use; no portion of such plant to be estimated, however, at less than its fair market value for any other purpose, including as an element of value any locations, or similar rights, acquired from private persons in connection therewith, plus the damages suffered by the severance of any portion of such plant lying outside of the limits of such city or town, unless it shall refuse or neglect to purchase the same, and minus the amount of any mortgage or other encumbrance or lien to which the plant so purchased, or any part thereof, may be subject at the time of transfer of title; but such city or town may require that such plant and property be transferred

to it free and clear from any mortgage or lien, unless the commissioners appointed under the provisions of section 13 of this act shall otherwise determine. Such value shall be estimated without enhancement on account of future earning capacity, or good will, or of exclusive privileges derived from rights in the public streets. If the main gas works or central lighting station of such a plant do not lie within the limits of the city or town which has voted as aforesaid, then such city or town shall only purchase that portion of such plant and property which lies within its limits, paying therefor upon the basis of value above established, but without allowance of damages on account of severance of plant. No city or town shall be obligated by this section to buy any apparatus or appliances covered by letters patent of the United States or embodying a patentable invention, unless a complete right to use the same and all other apparatus or appliances necessary for such use within the limits of such city or town, to such extent as such city or town shall reasonably require such right, shall be assigned or granted to such city or town at a cost as low as the cost of such right would be to the person, firm, or corporation whose plant is purchased. No city or town shall be obliged to buy any property added to a plant unnecessarily after the passage of its first vote that it is expedient to exercise the authority conferred in section 1, nor any property except such as shall be suitable for the ordinary business of the vendor which the city or town may assume; and if any property or plant which the city or town shall be entitled or obliged to buy under this act will not be available to the city or town if purchased, by reason of liens, interests of third parties, private contracts or other cause, whereby the city or town purchasing would be at a disadvantage in the use of the same as compared with the vendor, the city or town may be released from buying the same, or a discount may be made from the price to be paid for the plant, as the commissioner or commissioners provided for in section 13 shall determine to be equitable under the circumstances.

So much for the law as we understand it, applicable, as we claim, to the facts which will develop in the course of this hearing. Let us now come to the consideration in brief of the facts. The locality where these plants are situated, we say, is material upon the question of the determination of their value. Whether they are situated in a populous, growing, thriving community, with the population upon the increase,

business upon the increase, as the years go by, or are situated substantially in a dead town, or in a Sahara, is important. Because our claim is that locality is very material upon the question of opportunities, present opportunities, the question of adaptation, very material upon the question to be determined of what their fair market value is. Now the growth of Holyoke and its development have been remarkable,—yes, phenomenal. We say that it is almost common knowledge how extensive and rapid this growth has been, not only in population, but in valuation, and in the extent and variety of manufactures and industries and business. It lies in the Connecticut Valley, about one hundred miles from Boston, about one hundred and forty-five miles from New York, and midway between the two cities of Springfield and Northampton, on the highway of northern travel, and two independent lines of railroad give it quick connection with the central markets of the United States and with the seaboard. I say that Holyoke's rapid growth, and the extent and variety and magnitude of its manufactories, are common knowledge. It was incorporated as a town March 14, 1850, and as a city April 7, 1873. In 1865 its valuation was \$3,130,342, and its population 5,648. Its increase in population in the past thirty-three years was 696 per cent. Its increase in valuation in the same period has been 1,064 per cent. In 1865 its population was 5,648; its valuation, \$3,130,342. In 1870 its population was 10,733, an increase of 90 per cent. in five years; its valuation, \$5,556,660, an increase of 78 per cent. In 1875 its population was 16,260, an increase of 52 per cent. for the five years between 1870 and 1875; its valuation was \$9,681,127, an increase of 74 per cent. for the preceding five years. In 1880 its population was 21,915, an increase of 35 per cent. in five years; its valuation, \$10,665,937, an increase of 12 per cent. in five years. In 1885 its population was 27,895, an increase in five years of 27 per cent.; its valuation, \$16,135,515, an increase in valuation in five years of 51 per cent. In 1890 its population was 35,637, an increase of 28 per cent.; its valuation, \$22,730,825, an increase in the five years in val-

uation of 37 per cent. In 1895 its population was 40,322, an increase in five years of 13 per cent.; and its valuation, \$27,704,625, an increase in the five years of 26 per cent. In 1898, three years later, its population was 44,982, an increase in three years of 11 per cent. Its valuation was \$36,424,460, an increase in valuation in three years of 31 per cent. Six hundred and ninety-six per cent. increase in population in 33 years, 1,064 per cent. increase in valuation in 33 years. I dwell upon that, may it please your Honors, because it is a sweet morsel under my tongue.

The moving cause which has made this such a flourishing city and such a manufacturing centre, and which has added so greatly to the value and extent of the industries of New England, was not that it was a chance junction of intersecting railways or by reason of the demand of outlying towns for a trading centre: it was simply and solely that where the Connecticut River sweeps round the site of Holyoke there was a vast water power, almost unequalled by anything in the world, and which has received its development substantially at the hands of this petitioner,—development by a dam (which, by the way, is being replaced by another structure which shall substantially last forever), supplemented by magnificent canals. So that in this period of only a few passing years there has grown from the desert a magnificent city, and that is the city that we are lighting with our gas and with our electricity; it is the city that has ordained to go into the business of gas and electric lighting and power,—a city growing now, and, so far as we can judge by past and present, destined to grow, and grow rapidly, for many years to come.

The present dam was finished in 1849; and it has lasted and performed admirable service, and has been the envy substantially of every manufacturing community in the United States. I have seen it stated that the water power of Holyoke was as large as that of Lowell and Lawrence combined. Perhaps that may not be exactly so, and yet it may. It may be the opinion of an enthusiast or it may be the knowledge of an expert.

In 1848 Thomas Perkins, George W. Lyman, and Edmund Dwight were incorporated by an act of the legislature as the Hadley Falls Company, for the purpose of constructing and maintaining a dam across the Connecticut River, and one or more locks and canals, and of creating a water power, with a capital stock of \$4,000,000. By this company 1,100 acres of land were purchased. But this dam which was constructed gave way, when tested; and another was commenced and completed in the following year, and that has withstood the elements and the floods and the ice until the present time. The present dam was completed October 2, 1849. In 1868 the addition of the apron, which was a structure of large magnitude, was made.

Holyoke's railroad facilities, we say, are practically unexcelled by any like community in New England. The extent of its manufactures is large, and their variety is great, and the prosperity of its manufacturers, merchants, and citizens unexampled.

The Holyoke Water Power Company, this petitioner, was incorporated by the Acts of 1859, chapter 6, found in the Massachusetts Special Laws, volume 10, page 843. It became the successor of the Hadley Falls Company. For many years this petitioner has conducted a gas business in the city of Holyoke. This business has grown as the years went on. It owns a gas plant which, I am informed, is modern in its appliances, well fitted to produce not only what is required of it, but what may be required of it in the future, for many years to come, with facilities for reduplication of its various parts and mechanisms, and room therefor.

The land comprehended by this gas plant is a piece of ground about 500 feet in length, with an average width of about 180 feet, the area being 85,054 square feet. I do not know that I need to go into any description of the land, although I have it here. We say that it is most admirably situated for the purpose of gas manufacture,—admirable in its convenience to the railway, because the railway runs right to its doors; admirable also in its perfect drainage and in its isolated

position. It is so far, we say, from the stores and residences and the populated parts of Holyoke that the question of a nuisance or of its noisomeness can never come up; and it never has to the present time. The other lot of land comprehended in our gas plant is the one that contains the number three holder, and I am uncertain whether the Commission viewed that or not: I think not. It is situated upon the easterly side of Bridge Street, between Hamilton and Sargeant Streets. This is a lot containing 19,066 square feet.

There are contained in our gas plant two plants or processes, a water gas plant and a coal gas plant. Each has all the mechanisms specified in the schedule which has been filed with the city under the statutes already before referred to; that is, each has all the mechanisms that are there specified as applicable to each. A water gas plant of perfectly modern construction, it was designed, as we say, as was its apparatus, not only for the present, but for future needs. New and up to date it is.

I could go into the detail and description of the apparatus, but I think that I will forbear. The capacity of the water gas plant apparatus is 700,000 cubic feet of gas every twenty-four hours. The coal gas plant has a capacity of from 500,000 to 700,000 cubic feet every twenty-four hours.

Many and various are the buildings that are parts of this plant; and with it, and as a part of it, is one-half of a mill power of water. It is a part of the plant, under our contention, to be rented, and the rental therefor to be paid by the City.

There are the mains, — I think something like 33 miles of gas mains, and about 6 miles of service pipe. We say that every part of the apparatus of the gas works is in good, capable, serviceable condition, and earning a profit, and a large profit, upon the investment. We contend that the value of our gas plant is in the vicinity of \$850,000.

THE CHAIRMAN. Does that cover both?

Mr. BROOKS. Both coal and water, yes; and this is exclusive of power. The income from these works is somewhere

between \$30,000 and \$40,000. I will not be exact. This plant is adapted, we say, to the probable future growth, to the probable future demands that will be made upon it; and the opportunities are great and ample, in both the plants, gas and electric, for extension and expansion in the future.

As well as the gas, so was the electric plant built for the future. I understand that a high authority, in his opinion delivered to the city of Boston within a few years, has said in substance that the great trouble with electric plants of the present day is that they do not comprehend the future. They are not adapted for growth. They are not built for the demands that the future shall make upon them. I desire to say to the gentleman that that is not our condition. His criticisms of most of the electric plants of the United States fails when he looks over and examines our plant, and is amply met by the condition and constitution of our electric plant.

All his criticisms, strange to say, have been met and all the remedies have been applied in the city of Holyoke to meet the requirements of this high authority.

The Holyoke Water Power Company went into the electric light business in 1888. The present plant was built in 1891. It is fitted throughout in all its parts and in all its mechanisms, as I understand it, for the application of sixteen mill powers of water. Only eight mill powers are used at the present time, if I am informed correctly; but the buildings, the machinery, the wheels, everything connected with this great plant, being built for the future, is adapted for sixteen mill powers of water, and this Company have reserved that number for it. And we contend, and shall contend with a good deal of enthusiasm and with considerable fervor, that those sixteen mill powers of water are part and parcel of this plant, and cannot be separated from it.

The present opportunities for the enlargement of the business are great. And that does not mean, as we understand the law, a future earning capacity. It means a present capacity to be applied to the future.

In order — I intended to speak of it a little later on, but I

will speak of it now—that you may have an understanding with reference to the water power question as it may hereafter develop, it may be well for me to state that the water power that is applied in the city of Holyoke is owned by the Holyoke Water Power Company. They rent it. This particular kind of power, which is non-permanent power, but which is power, that can be used for twenty-four hours in a day as long as there is water to meet the demand required by permanent power rentals, and leave sufficient surplus of non-permanent, is rented at \$1,500 per year per mill power; and I presume a mill power is from 65 to 67 horse power. The water power is conveyed to the various would-be recipients by three grand systems of canals,—the first level, the second, and the third level: the first level is also known as the upper level canal,—and thence from the canals conveyed, of course, to the wheels of the manufacturing concern by the proper instrumentalities. So that, while the Holyoke Water Power Company does not at present offer to sell them outright the water, yet they take the land with a connecting right to draw water at a certain rental, which is \$1,500 per mill power per annum. So that the land, for instance, of the electric light station has connected with it, inherent in it, a right to rent sixteen mill powers of water from the Holyoke Water Power Company by the payment of \$1,500 per year per mill power therefor. And we say that it is not only the duty of the City to take this water power, and that they are bound by law to take it, but the Commission are bound by law to give it to them,—sixteen mill powers at its market value in rental, which is \$1,500 per mill power per year.

Every mechanism of the electric plant is performing excellent service, giving satisfaction, and resulting in very adequate returns,—not as large, perhaps, as they might be made by the City of Holyoke, perhaps not as large as they undoubtedly will be made by the City of Holyoke after they take this plant, because the Holyoke Water Power Company have not made any special effort to sell its electric power for other than lighting purposes. But we say that the demand in

Holyoke to-day for electricity for not only lighting purposes, but for heating and for motor purposes, is twice what the Holyoke Water Power Company are disposing of. We think we shall be able to prove that.

As it lies in my mind at present, much of the machinery and mechanisms in this electric plant is there in duplicate, so that in the event of one part giving out they can immediately substitute another similar part, and in the event of one whole mechanism giving out they can immediately move another and similar mechanism to its place, so that the supply shall always continue with the then demand, and there shall be no interruption to or cessation in the lighting of the city by electricity. And I meant to say in that connection that the Holyoke Water Power Company have made no special effort to enter into the field of domestic lighting; and we say that that field is now there open, a present absolute opportunity to increase the revenues of this gas plant more than twofold.

There is also a steam plant connected with it. It has been very seldom used; but under certain contingencies, if it should become desirable, they might use the steam. That is, the Water Power Company, as I recall it, have usually let the water out of their canals on Sunday, because no manufacturing industry except electric lighting in our city runs upon the Sabbath. So for Sunday purposes they have used steam. There are in addition about twenty days in the year when for repairs of canals it becomes necessary to shut off the water; and then steam is used,—modern appliances, well adapted to the situation.

Neither of these plants, either gas or electric, has been allowed to depreciate. They have received excellent care. Whenever a part became diseased, if I may so express it, perhaps a remedy was not applied, but a new part was obtained. And I think it will be the consensus of the opinion of men skilled in the sciences of gas and electricity that these two plants are in a phenomenally good condition. We say that the value of the electric plant, including the rental of eight mill powers, is \$503,630, and its income between \$20,000 and

\$30,000. This sum, of course, will be considerably increased when the other eight mill powers are taken into consideration. So that the sum total of our claim here, exclusive of water power, will be, I think, in the vicinity of \$1,400,000. I say our claim exclusive of eight mill powers of water. Of course, we only ask in our statement to the City \$1,000,000; and I think it has been a source of grief to my friend who is the senior in the case (Mr. Goulding) and myself that the demand made was so inadequate.

If it can be increased,—and we believe under the law it can be,—we in all probability shall ask to have \$400,000 or \$500,000 added to this little sum of \$1,000,000.

Now this sum stated in the schedules filed with the City was fixed by the late Judge Wells, without going into any considerable consideration of the various mechanisms, nor of the income. But it simply goes to show—and I speak of it in this connection, may it please your Honors—that we are not, for the purpose of having a fair market value awarded to us, asking more than what we think the fair market value is. I know it is sometimes considered fashionable for a claimant to ask a good deal more than he expects to receive, thinking that when the tribunal applies its pruning-knife, he will get about what he ought to have. We have not asked for enough: that is our claim.

THE CHAIRMAN. I do not quite understand how you have asked it. State the practice: in what way have you asked it? I suppose the statute—

Mr. GOULDING. Have you read the thirteenth section?

Mr. BROOKS. In our statement to the City, we must set the price.

THE CHAIRMAN. Yes.

Mr. BROOKS. And that \$1,000,000 that we have claimed there, I desire to say, is exclusive of any water power. Now the question may come up later, the City having refused our offer, whether or not it is not within your power, and we believe it is, to give more than we asked of the City in the statement or schedules filed with it. We made them an offer under

the statute, which they saw fit to reject; and we say — and at a proper time we shall ask for a ruling on it — that, having rejected our offer, having joined, as they say in their answer, in our request that the determination of the market value should be left out to a commission,— we say that then, having agreed to leave it to a commission, they are bound by what that commission may determine, and we say that we have a right under the law to an adjudication here of the market value in excess of \$1,000,000. And we have just as much right to raise our amount as they have to diminish it. That is, it is for you to say what the fair market value of this property is. If it exceeds \$1,000,000, we claim that it is your duty to say so, and that it is our right to take it. And, if they have a right to a diminution if they can prove it, we have the right to an increase if we can show proper reasons for it.

I desire for a moment to run back with your Honors to the dry question of water, in order that you may understand more clearly the water power theory under the practices and usages that are existing in Holyoke. As I understand it, when the Water Power Company sells land along its canals, it sells it with the right in the person to whom it is sold to draw by the payment of a certain rental a certain number of mill powers of water, which number they agree upon at the time of the sale. Now for the privilege of drawing that water by the paying of a rental they pay in the beginning, as a part of the price of the land, \$4,500 per mill power. That is what the market value in the City of Holyoke is of the right to draw water by the paying of the rental. And the rental of \$1,500 is put, if I may so express it, into a reserve fund by the Water Power Company, the object of that reserve fund being to keep the dam and canals in repair and the various instrumentalities in condition to give water when it may be required. Then, when the mill is erected upon the piece of land that the purchaser has paid for in the manner I have suggested, he begins to take water,— if it is sixteen mill power, sixteen mill powers of water,— and he pays as charge or rental for that water the sum of \$1,500 per year per mill power,— \$4,500

as a bonus, to begin with, if you desire to call it so, per mill power, and \$1,500 per year per mill power for rental thereafter. If we shall prove our case, as we think we shall, we shall hope to receive a sum at your hands largely in excess of what in a moment of ignorance the City was asked to pay in January, 1898.

(Certain witnesses for the petitioner were sworn.)

TITLE OF PETITIONER.

Mr. BROOKS. We shall put in certain documentary evidence.

Mr. MATTHEWS. I would like to inquire whether you propose to offer any form of lease other than the drafts contained in your schedule?

Mr. BROOKS. I don't know. I haven't seen the draft contained in our schedule.

Mr. GOULDING. We shall offer a form of lease at some time.

Mr. MATTHEWS. I call the attention of the Commission to the fact that the schedule filed by the Company states certain terms and conditions upon which they will lease this water power; and my inquiry is directed to this point, whether the Company intends to furnish us with a more formal instrument than that.

Mr. BROOKS. Oh, yes, we do.

Mr. MATTHEWS. And, if so, ought not that to be produced now?

Mr. BROOKS. I do not know as we have got to do it now.

THE CHAIRMAN. At your convenience, of course.

Mr. BROOKS. Certainly, your Honors; but I have something that I think comes in a little before that.

Mr. MATTHEWS. I will say, also, Mr. Brooks, that my question applies to the land.

Mr. BROOKS. We do not understand there is any question of title here.

Mr. MATTHEWS. In respect to the property owned by the Company we admit absolutely nothing. All we have admitted is that the preliminaries upon which the right to sell to the city a gas or electric light plant ensued were taken. But we do not admit that the Holyoke Water Power Company owns a dollar's worth of property which it is competent for this Commission to take into account; and we shall ask the Company to prove its case at every point, particularly in respect to the water power and land.

Mr. BROOKS. Of course, they can ask us to prove it; but, when they have admitted it, I do not suppose we are obliged to. They say in their answer that they admit that the Company "owns and operates and has for several years owned and operated plants in said Holyoke for the manufacture, generation, and distribution of gas and electricity for sale for lighting purposes, and is now, and for several years last past has been, engaged in the business of making, generating, and distributing gas and electricity for sale for lighting purposes." Then they agree upon the number of plants. They say one gas plant and one electric plant. And they state "that the parties have failed to agree as to what shall be sold and what the terms of sale and delivery in accordance with the provisions of law in such case made and provided shall be, and that the acts and requirements necessary before the filing of the petition have been performed by each of the parties." Now I assume —

THE CHAIRMAN. It does not follow that you must do it now.

Mr. GOULDING. We understand that the pleadings proceed with reference to each other, that the answer has reference to the petition, and the petition sets forth that we own these gas and electric plants, and that we have furnished the City with a schedule of them. We think that the admission is of title to the whole property referred to in the schedule filed with the City Clerk, so that we do not quite understand the force of the statement on the other side, that the title has not been admitted.

Mr. GREEN. I think there is some difference, may it please your Honors. In the first place, we do not admit anything beyond just what we set out there. No matter what force the admission has, we do not admit anything in respect to the extent of the plant, the appurtenances, the easements, or anything of that nature. Your Honors have got to determine first whether this location is suitable for the purposes for which they have offered it to us. We shall claim, and it may appear from this evidence, that they have offered land to which there is no right of way; that they have offered land to which we have no way of approach, except by permission of other parties. All these points of appurtenances, easements, availability, accessibility, are material. All we say is, there are plants which are being operated there. We do not admit what those plants are or what they contain.

THE CHAIRMAN. Of course, they will have to point out the property.

Mr. GOULDING. It is very evident that this statute will raise before we get through with it some interesting questions; but we will remind the other side that a little careful inspection of the statute will show that the plant is required to be taken, and property suitable and used with it is required to be taken, and that property used with the plant which is suitable is the field in which your inquiries will be made, and to which your inquiries will be limited, on the question of what shall be bought and sold, as we understand the statute. And we want our friends not to misunderstand that we have given some little attention to the statute, and that we have decided views,—it may be mistaken views, but decided views about it.

As to the precise question before us, it seems to me, beyond any question, that they have admitted the title to the property that we have a schedule of. They have not admitted that the property outside the plant is suitable; nor do I imagine that that is going to raise any practical difficulty, because we expect to show your Honors by plans and by the ordinary methods exactly what our property is. There is nothing to conceal about it, of course. There is everything to expose

about it. I do not know whether we have got the deeds here this afternoon that show the title; but we can have them if they become important, if there is any question as to the title raised. But, undoubtedly, it is part of our case to show you what we have got and how they have been heretofore used.

THE CHAIRMAN. You can go forward in your own way; and, if you find any difficulty about the title that is not disposed of by the answer, why we will give you an opportunity.

Mr. BROOKS. We propose to introduce the deeds, may it please your Honors, of this property, not for the purpose of proving title so much as for the purpose of fixing the location of the property; and, with your Honors' permission, in a moment I will send for the record book. I do not know that you want me to produce the original deeds. The record book will answer the purpose.

THE CHAIRMAN. Where is your schedule? Have you got that?

Mr. BROOKS (to Mr. Green). Will you give me the original schedule?

Mr. GREEN. I haven't the original: I have a copy.

Mr. BROOKS. Will you let me have it?

Mr. GREEN. Yes.

Mr. BROOKS. I will put in the schedule.

Mr. GOULDING. Whatever you put in had better be marked, I think.

Mr. BROOKS. If you will let me put that copy in with all the efficacy of your original, you can substitute the original afterwards.

THE CHAIRMAN. Have it marked by the stenographer, please.

(Copy of schedule introduced and marked Exhibit 1. Mr. Brooks read portions of the schedule, which in full is as follows):—

SCHEDULES
OF
GAS AND ELECTRIC PLANTS
OF
HOLYOKE WATER POWER COMPANY.

HOLYOKE, MASSACHUSETTS, JAN. 8, 1898.

(Indorsed as follows:)

Filed in the City Clerk's office, Jan. 8, 1898, at 3.20 o'clock P.M.

EDW. A. KANE, *City Clerk.*

HOLYOKE, MASS., Jan. 8, 1898.

TO THE CITY OF HOLYOKE:

The City of Holyoke having voted to install an electric lighting plant, the Holyoke Water Power Company (a corporation now and heretofore — to wit, for more than six years — engaged in the business of making, generating and distributing gas and electricity for lighting purposes in said city) elects to sell to the city of Holyoke the whole of its gas plant, also the whole of the electric light plant, with the lands and buildings and other property suitable therefor and used in connection therewith, situated in the city of Holyoke, a detailed schedule of which is filed herewith, showing the property which it desires to sell, said schedule containing a description of the lands and buildings to be sold in connection therewith, as well as all other property, and the several plans also filed herewith, marked respectively "A," "B," "C," "D," "E," showing the locations of the various buildings and lands to be sold therewith, as described in the schedules,—the location of the mains and gas pipes of the gas plant, and the location of the poles and wires of the electric plant; the Company to give to the City the right to maintain its poles and lines over any of the lands owned by the Holyoke Water Power Company where the same are now located.

The terms to be cash, and the price at which the same are offered is for both plants one million dollars, conveyance of the same to be made by proper deeds and conveyances at the time the purchase is completed.

The Holyoke Water Power Company also offers and desires to sell by lease, in such form as ordinarily used for such conveyances by it in Holyoke, one-half ($\frac{1}{2}$) of one (1) mill power of water, to be used in connection with the gas plant as described in said schedule; also sixteen (16) non-permanent, twenty-four (24) hour mill powers of water, as described in the said schedules, to be drawn from the first-level canal and used in connection with the electric plant, the lease thereof to be in the form ordinarily used for making such leases by the said Company in said Holyoke, said non-permanent mill powers being fully described in the schedules filed herewith; the sum to be paid for rental of said mill powers of water to be fifteen hundred (\$1,500) dollars a year for each and every one of said sixteen and one-half mill powers, payable in semi-annual payments, with proportionate rebate for such time in each and every six months as the water shall not be furnished.

HOLYOKE WATER POWER COMPANY,

By GIDEON WELLS, *President*.

EDWARD S. WATERS, *Treasurer*.

SCHEDULE OF ELECTRIC LIGHT AND POWER PLANT.

The land occupied by the Electric Light and Power Plant is described as follows, viz.: —

Beginning at a point three hundred (300) feet northerly from the northerly line of Sargeant Street and thirty (30) feet easterly from the easterly water line of the first or upper level canal, and thence running north-easterly on a line parallel with and thirty (30) feet easterly from said water line of said canal, two hundred fifty and twenty-five one hundredths (250.25) feet.

(The above-described point being in the northerly line of the mill site of the Geo. R. Dickinson Paper Company, and above described boundary line is the easterly line of a passageway twenty-nine and one-half ($29\frac{1}{2}$) feet wide, extending from said Paper Company to Cabot Street.) Thence south-easterly at a right angle to said pass-

ageway sixty-two (62) feet; thence south-westerly at a right angle to the last-described line and parallel with said passageway one hundred fifty-six and forty-two one-hundredths (156.42) feet; thence south-easterly at a right angle to the last-described line forty-eight and sixty-seven one-hundredths (48.67) feet; thence south-westerly and parallel with said passageway thirty-nine and fifty one-hundredths (39.50) feet; thence south-easterly at a right angle to the last-described line seventy-one (71) feet; thence south-westerly and parallel with said passageway ten and eighty-three one-hundredths (10.83) feet; thence south-easterly at a right angle to last-described line twenty-nine (29) feet; thence southerly fifty-eight and nineteen one-hundredths (58.19) feet to point in northerly line of land of said Paper Company; thence north-westerly along said northerly line of land of said Paper Company two hundred fifty-one and four one-hundredths (251.04) feet to the place of beginning, containing twenty-five thousand eight hundred and thirty (25,830) square feet more or less; together with the buildings thereon, the head-gates, wheel-pits, iron flumes and the iron penstocks leading from said canal to said flumes, and the raceway leading from said wheel-pit to the second level canal; also the shafting tunnels extending from said wheel house to the dynamo building; also sixteen (16) non-permanent 24-hour mill powers of water as hereinafter limited and described, from said Holyoke Water Power Company's upper level canal, whenever in the opinion of the hydraulic engineer of said Company or such officer or agent of said Company as may have the matter in charge, there is sufficient water flowing in the Connecticut River per second to permit such use in excess of the sum of the four quantities named hereafter, *viz.* :

1. The quantity of water per second needed to supply the lawful demands of all persons or corporations now having the right to use said water from the said upper level canal (including those drawings from the South Hadley Canal) heretofore made or granted by said Holyoke Water Power Company or those under whom it claims, and now on record in the Hampden or Hampshire County Registry of Deeds.

2. The quantity of water per second needed to supply the water powers heretofore appropriated by said Company for its own use and the use of its tenants and its and their successors and assigns, on said upper level canal, being a quantity of water per second which would constitute seventeen mill powers on that level if used every working day in the year.

3. The quantity of water per second which may be needed to supply the lawful demands of all persons or corporations now having the right or agreements for rights to use said water from the second or third levels, heretofore made or granted by said Company, or those under whom it claims, which may be in excess at any time of the quantities supplied to said levels by the mills in operation on said upper level canal.

4. The quantity of water per second equal to fifty per centum of the sum of the three quantities already named as granted or appropriated.

A non-permanent 24-hour mill power, being the right to take from said canal during the 24 hours of a day, but excluding Sundays and legal holidays, the same quantity of water per second that might be drawn per second under a grant of a mill power as defined in the proposals making a part of the Indentures of said Company for the lease of its water power, and to be conveyed subject to the limitations and restrictions contained in said proposals and the forms of lease used by said Company for like mill powers.

The Holyoke Water Power Company reserves to itself, its successors, and assigns, a right of way thirty-seven and ninety-two one-hundredths (37.92) feet in width extending easterly from said passageway to its carpenter shop lot and between the wheel house and dynamo building as a passageway, and for the purpose of maintaining, repairing, and renewing the water trunk and water pipe located therein.

The Holyoke Water Power Company to give said City the right to maintain the raceways as now constructed, and extending from the wheel house to the second level canal.

ELECTRICAL PLANT SCHEDULE.

Buildings and land.

Dynamos.

21 Schuyler Arc Dynamos (1—16 lt. 4—25 lt. 8—30 lt. 1—40 lt. 7—50 lt.

2 Edison incandescent dynamos, 500 lights each.

1 General Electric 120 K. W. Alternator, 2,000 lights.

1 Edison 100 K. W. 500 volt generator 130 horse power, 3 extra armatures, 1 arc, 1 incandescent, and 1 power.

1 exciter for alternator.

- 1-8 horse power T. & H. motor.
- 1-20 circuit slate switch-board.
- 29 ammeters in station.
- 1 ammeter portable 10 amperes Whitney.
- 2 volt meters in station.
- 1 volt meter portable 220 volt Edison.
- 6 pressure indicators.
- 19 Schuyler arc regulators.
- 2 controllers, Holtzer-Cabot.
- 7 switches.
- 14 feeder fuse blocks.
- 1 circuit breaker.
- 1 wire gauge.
- 43 lightning arresters.
- 6 iron-clad equalizers.
- 6 rheostats.
- 2 ground detectors.
- 7 type F 150 light T. H. transformers.
- 1 type H 150 light.
- 297 Schuyler double arc lamps.
- 285 " single " "
- 73 single arc lamps in repair shop.
- 6 Waterhouse and Gamble arc lamps.
- 1 Sperry arc lamp.
- 2 No. 2 Edison meters complete.
- 2 No. 4 Edison meters complete.
- 3 No. 8 Edison meters complete.
- 2 Class 5 T. H. Watt meters.
- 11 " 7½ " " "
- 3 " 15 " " "
- 6 " 25 " " "
- 4 " 50 " " "
- 1 meter scale for weighing meter plates.
- 190 arc hanger boards in stores.
- 76 switches in power connections.
- 163 porcelain cut-outs incandescent connections.
- 152 " " power incandescent connections.
- 112 Brady cut-outs arc incandescent connections.
- 80 spark arresters.
- 273 iron line poles, set.
- 194 octagonal chestnut and southern pine light poles, with hoods, hanger boards, cross heads, and steps, complete set.

15 square southern pine light poles, with hoods, hanger boards, cross heads, and steps, complete set.

3 round chestnut light poles, with hoods, hanger boards, cross heads, and steps, complete set.

43 mast arm poles with hoods, hanger boards, and cables, complete set.

262 octagonal chestnut and southern pine, 25-ft. poles set.

31 " " " " " 30-ft. " "

54 square southern pine, 25-ft. poles set.

389 round chestnut, 25-ft. poles set.

12 " " 30-ft. " "

19 " " 35-ft. " "

4 " " 40-ft. " "

4 " " heavy chestnut in tower, 45-ft. poles set.

1 iron heavy junction pole, 32-ft. poles set.

2 mast arms in station.

Wire.

6,000 feet 4/0 wire.

5,940 " No. 0 "

15,670 " No. 1 "

9,480 " No. 2 "

7,400 " No. 4 "

404,165 " No. 6 "

49,590 " No. 10 "

13,960 " No. 12 "

All the above wire put up on poles and connections outside of station.

Cross Arms, Pins, Insulators, etc., in Pole Line Construction.

28 10 pin cross arms with pins and insulators.

78 6 " " " " " "

346 4 " " " " " "

1,550 2 " " " " " "

25 special " " " " " " for bridges.

327 wood brackets with insulators.

142 iron break arms with "

77 iron angles " "

38 iron pins " "

25 iron centre pins for iron poles with insulators.

14 extensions with cross arms, pins and insulators complete.

- 35 iron guards.
- 41 iron braces.
- 5 extra cross heads on poles on street.

Boiler House.

- 5 15 x 5 ft. Manning boilers and settings.
- 2 Deane steam pumps.
- 1 National Feed Water Heater.
- 1 dormant scale.
- 1 iron wheelbarrow.
- 1 wood wheelbarrow.
- 1 slicing bar.
- 1 poker.

Engine Room.

- 2 Wheelock engines, 400 H.P. each, with their belts attached.
- 1 steam gauge.
- 1 oiling set.
- 1 oil tank.

Wheel House.

- 4 45-in. Hercules water wheels.
- 4 Snow governors, with belt connections.
- 1 extra wood tooth crown gear.
- 1 extra iron jack gear with shaft 5 ft. 3 in. long.
- 2 bevelled gears for governors and ten extra dogs for governor.
- 1 extra wheel shoe.
- 1 " " step.
- 2 oil tanks.
- 50 feet 2-in. iron pipe.
- 1 2-in. brass valve.
- 1 2-in. ell.
- 1 2-in. union, the above pipe for pumping out wheel-pit.

Basement.

- 4 lines of shafting 666 ft. $5\frac{7}{8}$ in. hammered and turned, with 26 couplings, 20 pedestal boxes, 66 shafting stands and boxes, 8 loose pulley stands and horns, 2 idler stands and boxes, 11 6-arm clutches, 95 pulleys, 9 belt tighteners, 16 belt shifters, 1 tachometer, 3 oil filters, 21 belts connecting dynamos and generators.
- 4 water-wheel belts 24 in. ; 1 cross-over belt 36 in.

Office.

- 1 roll-top desk.
- 1 flat-top desk.
- 1 revolving office chair.
- 2 cane-seat chairs.
- 1 letter-copying press and cabinet.
- 1 clock.
- 1 draughting table.
- 1 relay for telephone.
- 1 large map of city.

Store Room.

- 1 portable platform scale.
- 1 arc-light testing rack, with 25 switches.
- 1 incandescent testing bank with 40 Edison sockets, with cutouts, switches, and 2 resistance boards complete.
- 1 lathe with 3 chucks and counter shaft.
- 1 hoisting crane.
- 1 hoisting crab.
- 1 heavy truck.
- 1 small truck.

Tools.

- 3 bench vises.
- 2 steel bars.
- 1 nail puller.
- 1 9-in. cutting pliers.
- 1 splicing clamp.
- 1 pipe tongs, $\frac{1}{2}$ in.
- 5 monkey wrenches, 12 in., 15 in., and 20 in.
- 2 machinist hammers.
- 1 nail hammer.
- 2 soldering irons.
- 1 tinner's fire pot.
- 2 gasolene torches.
- 1 clamp for guy wire.
- 1 come-along clamp.
- 1 pair climbers.
- 2 bit braces.
- 9 auger bits.
- 1 draw-shave, 10 in.
- 4 augers, 2 in., $1\frac{5}{8}$ in., $1\frac{1}{2}$ in., $1\frac{1}{4}$ in.
- 6 coal shovels.

- 4 digging spades.
- 5 digging spoons.
- 2 iron tampers.
- 1 wood tamper.
- 1 pipe tamper.
- 2 carrying hooks.
- 2 cant-hooks without handles.
- 1 dead man with extra head.
- 2 cast steel digging bars.
- 2 limb trimmers.
- 1 axe.
- 3 pike poles with pikes.
- 13 pike poles without pikes.
- 1 fork pole for raising mast arms.
- 4 trimmers' step ladders.
- 1 6-ft. ladder.
- 1 13-ft. ladder.
- 2 21-ft ladders.
- 2 21-ft. ladders, new.
- 1 25-ft. ladder.
- 1 push cart.
- 2 hand lines, 1-65 in., 1-85 ft.
- 1 7-in. pliers.
- 1 8-in. pliers.
- 2 oil lanterns.
- 1 75-ft. tape.
- 1 splicing vise.
- 1 strap and vise.
- 1 swivel hood 7 in.
- 1 lifting harness for armatures.
- 2 heavy hooks for lifting armatures.
- 1 armature chain, hooks and triangle.
- 1 heavy chain, 17 ft. 6 in. long.
- 1 heavy chain, 6 ft. 4 in. long.
- 2 heavy chains, 7 ft. each, with hook and ring.
- 90 feet $\frac{1}{2}$ -in. rope.
- 130 feet $\frac{3}{4}$ -in. rope.
- 138 feet $1\frac{1}{8}$ -in. rope.
- 1 set $3\frac{1}{2}$ -in. iron blocks, 1 sheave and 2 sheaves.
- 1 set 6-in. wood blocks, 2 sheaves and 3 sheaves.
- 1 set 10-in. wood blocks, 2 sheaves and 3 sheaves.

- 1 6-in. lightning screw plate set.
- 1 naphtha soldering pot.
- 2 gaslight stands.

Supplies

Such as coal, carbons, incandescent lamps, spare belts and belting, oil waste, arc-light globes, lamp-repairing parts, commutator rings and segments, paint, wire, cable poles, cross arms, insulators, pins, brackets, bolts, cut-outs, cut-out plugs, fuse wire, hoods, cross heads, brushes and brush copper, clutch shoes, tape, solder, etc., at cost, and are additional to the price heretofore named as the price for plant.

SCHEDULE OF GAS WORKS PROPERTY.

The land occupied by the gas works is bounded westerly by a passageway used in common by the Parsons Paper Company and the Holyoke Water Power Company, northerly by the right of way of the Holyoke and Westfield Railroad river branch track, southerly by the raceway, and contains eighty-five thousand and fifty-four (85,054) square feet more or less. A strip of land ten (10) feet in width along said raceway not to be built upon; and the Holyoke Water Power Company reserves to itself, its successors and assigns, the right to enter upon said strip of land to repair or renew the walls of said raceway.

Also the right to use upon said land one-half a mill power of non-permanent water subject to a perpetual rental of seven hundred and fifty dollars (\$750) per annum payable semi-annually.

The land occupied by the gasometer is bounded as follows: Beginning at a point in the easterly side of Bridge Street one hundred (100) feet southerly from the southerly side of Hamilton Street and bounded westerly one hundred fifty-one and thirty-two one-hundredths (151.32) feet on said Bridge Street; southerly one hundred and twenty-six (126) feet on land now or late of Oswald Wagner; easterly one hundred fifty-one and thirty-two one-hundredths (151.32) feet by the centre line of an alley sixteen (16) feet in width, running from said Hamilton Street to Sargeant Street; northerly one hundred and twenty-six (126) feet by land now or late of A. B. & Levi Harris, containing nineteen thousand and sixty-six (19,066) square feet, more or less.

Water gas plant and building.

Three holders, tank and house.

Retort house, exhaustor, purifier building, shop and lime room building and passageway.

Water gas meter and store room. Valve room. Blacksmith shop. Coal shed. Two store sheds. Engine shed. Horse shed. Five tar wells. Office and concrete in yard.

Stacks of benches; boilers and stack in place.

Water wheel and gearing. Wheel-pit, Penstock and tailrace. Twelve-horse power steam engine.

Dynamo, wiring and lamps. Exhausters, valves, fittings and pipes. Shafting, pulleys, hangers and stringers. Wooden pulleys and belting. Two condensers. Tar extractor and Bye pass. Standard scrubber, valves and fittings.

Purifiers, centre seal, carriage, trays and floor beams.

Station meter and six valves.

Pressure governor, valves, gauges, coal hoist, coal scales. Two oil tanks. Ammonia tank. Bar photometer. Apparatus in office and meter prover.

Pipes about the works as follows :

820 feet 12-in. gas main. 680 feet 6-in. water main. 621 feet 4-in. water main; 85 feet 3-in. revivifying pipes and valves. 792 feet 2-in. and 1-in. water pipe. 1,449 feet steam pipe from $\frac{3}{4}$ -in. to 3-in. valves. 393 feet 3-in., 4-in., 6-in. tar pipes. 524 feet $\frac{1}{2}$ -in., $\frac{3}{4}$ -in. and 1-in. gas pipe. Steam traps. Steam pot and radiators.

Street Mains.

440 feet 15-in. pipe. 10,475 feet 12-in. pipe. 5,964 feet 8-in. pipe. 32,033 feet 6-in. pipe. 28,781 feet 4-in. pipe. 68,219 feet 3-in. pipe. 1,953 feet 2 $\frac{1}{2}$ -in. pipe. 7,895 feet 2-in. pipe. 2,824 feet 1 $\frac{1}{2}$ -in. pipe. 6,776 feet 1 $\frac{1}{4}$ -in. pipe. 3,127 feet 1-in. pipe. 30,000 feet service pipe.

Gates.

36 of 3-in.; 21 of 4-in.; 26 of 6-in.; 5 of 8-in.; 5 of 12-in.; 1 of 16-in., and 94 gate boxes. Bridge over first level canal.

Meters.

1 of 2 lights; 2,140 of 3 lights; 89 of 5 lights; 84 of 10 lights; 4 $\frac{1}{2}$ of 20 lights; 30 of 30 lights; 25 of 45 lights; 10 of 60 lights; 4 of 80 lights; 8 of 100 lights; 8 of 150 lights; 7 of 200 lights; 1 of 250 lights; 7 of 300 lights; 1 of 400 lights. 1,700 meter shelves. Meter unions.

Cast Iron Pipe on hand.

552½ feet 3-in.; 534½ feet 4-in.; 2,603½ feet 6-in.; 7½ feet 8-in.;
1,060½ feet 12-in.; 62½ feet 16 in.; 53 feet 15-in.; 424 feet 3 in.
22,333 pounds of cast iron fittings.

Street Gates and Boxes.

4 of 3-in.; 1 of 4-in.; 5 of 8-in.; 4 of 8-in.; 8 gate boxes, 5½ gate boxes.

Wrought Iron Pipe.

223 feet of ¼-in.; 377 feet of ¾-in.; 368 feet of ½-in.; 1,987 feet of ¾-in.; 6,183 feet of 1-in.; 4,530 feet of 1¼-in.; 4,705 feet of 1½-in.; 2,839 feet of 2-in.; 86 feet of 2½-in.; 10 feet of 3-in.; 111½ feet of 6-in.

66 brass gas cocks, 1 cast iron cock, wrought iron fittings.

Old Pipe.

103 feet of 1-in.; 443 feet of 1¼-in.; 123 feet of 1½-in.

Gas Meters on Hand.

74 of 3 lights, 20 of 5 lights, 6 of 10 lights, 2 of 20 lights, 6 of 30 lights, 1 of 45 lights, 1 of 300 lights. Meter connections and 81 meter shelves.

Materials and Tools.

30 retorts, 8 grate bars, 2,126 lb. castings for coal benches, 9 pails, 2,215 lbs. firing tools, 4 coal wagons, 2 coke chutes, 2 coke buggies, 29 shovels, 10 wheelbarrows, 8 ladders, 13 pair tongs, 4 monkey wrenches, 7 Stillson wrenches, 1 pipe bench, 2 vises, 7 pipe cutters, 4 stocks and 25 dies, 1 chain tongs, 1 special wrench 2-inch, 2 furnaces and 3 kettles and ladles, 1 cast iron pipe cutter, 17 cold chisels, 6 diamond points, 20 caulking tools, 5 cutter chisels, 1 set of jointers, 5 caulking hammers, 2 paving and 9 sledge hammers, 2 rachets, 20 drills, 15 tapes, 13 combination drills and taps, 4 reamers, 3 pipe tapping claws, 36 picks, 9 lanterns, 3 tool boxes and vise, 7 sounding bars, 4 crowbars, 9 levels, 1 service cleaner, 2 drip pumps, 10 S wrenches, 1 retort truck, 2 common trucks, 2 carpenter's boxes, carpenter's tools and bench, 4 carpenter's horses, 4 axes, oil cans, meter bench, blacksmith's forge, hoisting tackles, 1 spade, 9 baskets, 1 Scotch and one bench drill, 3 gas gates and 3 gas-cock pipes, 1 side derrick, 1 pair shears.

Office furniture, including books and map, horse, buggy, sleigh, harness, and blankets, 5 chairs, 3 benches in retort house, bath room, hoisting engine, 2 old boilers, 1 dumping coal wagon, 2 dumping coal buckets, 5 door roll hangers, 72 lbs. pipe hangers, 1 tar injector, 2 chains, 7,140 lb. iron flooring, 4-inch I floor beams. Water gas teleter.

Supplies on hand at time of delivery, such as fire-clay, fire-bricks, lead, coal-oil, lime, coke, tar, etc., to be sold at cost, and are additional to the price heretofore named as the price for plant.

MR. BROOKS. I do not know how much of this schedule it may be desirable to read.

THE CHAIRMAN. I see you describe the land.

MR. BROOKS. Yes, sir.

MR. GOULDING. And refer to plans, and they admit in their answer what they do admit.

THE CHAIRMAN. You need not disturb yourselves with this question for the present, but go forward as if the title were all right.

MR. BROOKS. Of course, I should like to —

THE CHAIRMAN. This, I understand, is to go in as an exhibit. Anybody can refer to it, of course.

MR. BROOKS. Yes, sir. If there is any mistake in it, why, it may be corrected from the original. We do not want to put in but one of these.

MR. MATTHEWS. If the Commission please, in respect to the alleged admission by the City of title, I will only repeat that we do not understand that in our answer we admitted anything except the one fact that the Company is operating a gas plant and an electric plant in the city of Holyoke. Now it may be, if the contention on the other side is well founded, that we should amend our answer, and we would therefore solicit the ruling of the Commission upon that point now; and, in case the Commission should decide that the answer admits title in the Company, we should ask permission to amend.

THE CHAIRMAN. What do you have reference to?

Mr. MATTHEWS. The title to the land.

THE CHAIRMAN. The title to all the land involved?

Mr. MATTHEWS. All the land, yes.

THE CHAIRMAN. You state in your answer that it has "for several years owned and operated plants," etc.

Mr. MATTHEWS. A plant, yes.

Mr. GOULDING. That must be the plant we are talking about.

THE CHAIRMAN. I think the Commissioners think that there is an admission of title here on the part of the respondent.

Mr. MATTHEWS. We then ask leave to amend.

Mr. BROOKS. If I may be allowed to interrupt, I do not know whether the Commission has the power.

THE CHAIRMAN. While we may not have the power to permit the amendment, I think we may go on.

Mr. GOULDING. In the course of showing —

THE CHAIRMAN. Certainly, we have not the power to allow that amendment; but, if the question is to be controverted at all, why will not the parties open that up?

Mr. GOULDING. I am not instructed that there is any possible difficulty with the title; and I suppose that, in the course of the evidence showing the extent and nature of our property, very likely all these things will be eliminated. So far as a mere technical admission in the answer is concerned, if it was made under any mistake, I suppose allowance will be made.

Mr. BROOKS. Do you really seriously question the title?

Mr. MATTHEWS. Pardon me for a moment. Perhaps I can clear the matter up. There will be a controversy, not, I assume, in respect to the fee of the property, which they offer to sell to the City. I do not know anything about it, but I assume their title is good. But there will be a question about rights of way, we think, and about boundaries. We are quite certain that there will be a dispute as to boundaries; and, therefore, I precipitated this discussion by asking the learned counsel for the Company if they purposed to give us a more formal deed than that contained in their schedule. I will

say that the only matter that is likely to be seriously in dispute respecting the title to this land is in respect to boundaries and rights of way.

THE CHAIRMAN. Can you specify those now?

Mr. MATTHEWS. The boundary of the electric light lot and the rights appurtenant to it; that is, the rights appurtenant to the land, if any. Therefore, we desire at the outset to see the deeds they are going to give us; and we certainly should ask them to prove all the title they have in respect to boundaries, rights of way, and other appurtenances. And at this point, may it please the Commission, we would like also to call the attention of counsel upon the other side to the fact, that as we did not suppose we were admitting anything more than the fact that they had a gas plant in operation and an electric light plant in operation, in our answer, so, in like manner, we did not understand we were admitting, in filing this answer, that the Company was legally established as a gas company in the city of Holyoke or legally established as an electric light company in the city of Holyoke. We desire at the proper time to raise the question, and we speak of it now for the benefit of counsel on the other side, that the Holyoke Water Power Company has not, and never has had, a legal right to do a gas or electric light business in the city of Holyoke,—for whatever that may be worth in any aspect of the case. Now, if our answer is an admission on the one point,—namely, that of title,—it may possibly be upon the other; and we should ask leave of Court to amend in both particulars.

THE CHAIRMAN. Let me make this suggestion,—that you may go forward in the trial of your case upon the theory that the Court will permit you to make that amendment. We will report any question of that kind that you desire to have reported, so you can open the question to the Court. Of course, we have no authority to grant an amendment.

Mr. MATTHEWS. That is, we understand the City has leave to amend?

THE CHAIRMAN. No, we have no power to do that; but we will report to the Court any specific question that you desire

to raise. Then you can call the Court's attention to it, and have the papers properly arranged, if the Court will permit you to do it, and go forward.

MR. GOULDING. We think it is a little too late at this point to suggest an amendment that we are not a gas company or an electric light company legally established, after this Commission has been appointed. The time to try that question was before the Court.

MR. BROOKS. Of course there is an absolute admission that we are.

MR. GREEN. I might suggest, in that connection, that I fail to see, even if your Honors might construe that as an admission on the subject of title, how it can be any possible admission on the question of the legality or illegality of their doing or conducting the business. We merely say they are conducting and operating a plant. We do not admit they are doing it legally or properly.

THE CHAIRMAN. Well, you can raise the question.

MR. GREEN. Yes, sir.

MR. BROOKS. Do I need to read any more of this schedule, your Honor?

THE CHAIRMAN. I don't think so.

MR. BROOKS. Where are those plans that we filed with the City, Mr. Green? Have you them?

MR. GREEN. Those are our copies. We have blue-print copies here.

MR. BROOKS. Will you let us take them?

MR. GREEN. Oh, certainly.

MR. BROOKS. Excuse me a minute.

(A conference ensued between counsel.)

THE CHAIRMAN. You need not trouble yourself, Mr. Brooks, about following any special line of evidence.

MR. BROOKS. I will call Mr. James M. Sickman.

JAMES M. SICKMAN, *sworn*.

By Mr. BROOKS.

Q. Your full name is James M. Sickman? A. It is.

Q. You are a resident of the city of Holyoke? A. I am.

Q. And have been for how many years? A. Twenty-six.

Q. And are in the employ of the Holyoke Water Company, this petitioner? A. I am.

Q. And for how many years have you been in their employ? A. Twenty-six.

Q. And in what capacity are you and have you for many years been employed? A. As an engineer.

Q. Civil engineer? A. Yes, sir.

Q. And you have charge of the plans, etc., of the land of the Holyoke Water Power Company? A. I have.

Q. And from time to time have you compared the deeds of the land of the Holyoke Water Power Company with the plan that is on file and a part of Vol. 196 of the Hampden County Registry of Deeds? A. I have.

Mr. BROOKS. Now I will offer in evidence, may it please your Honors, the deed of George W. Lyman and others as receivers of the Hadley Falls Company to Alfred Smith. That deed is recorded in book 196, page 137, of the Hampden County Registry of Deeds. The date of the deed is the 12th day of March, 1859.

I offer also the indenture between Alfred Smith and Henry A. Perkins *et alii*, recorded in the Hampden County Registry of Deeds, book 196, page 143, bearing date March 12, 1859.

I offer another deed, from Henry A. Perkins *et alii* to the Holyoke Water Power Company, dated March 22, 1859, recorded in the Hampden County Registry of Deeds, book 196, page 264. With the first deed that I have read there goes a plan which is a part of the record and which is referred to.

Q. (Placing book from the Registry of Deeds before the witness.) Mr. Sickman, whether or not you have made an examination of that plan a good many times? A. I have.

Q. And whether or not you have made from the plan any

tracing, or copied it in any way? *A.* I have copied it from what apparently is the original from which this was traced.

Q. Have you a copy in your hand? *A.* I have, with certain additions.

Q. Now what are the additions? *A.* The lots contemplated,—the lots of land mentioned in the schedule presented to the city of Holyoke.

Q. You mean the schedule of the property? *A.* Yes, sir.

Q. Of the two plants, which they filed within thirty days from the final vote? *A.* I do.

Q. Now, Mr. Sickman, did you draw the description of the two tracts of land which are comprehended by that schedule? *A.* I believe I did,—yes, sir.

Q. Where are those two tracts located upon this plan? *A.* There are three.

Q. The three tracts? *A.* One is—

Q. Perhaps you had better show that to the Commission. I will ask you, Are those in yellow, those three tracts? *A.* Yes, sir.

Q. Upon your plan? *A.* They are.

Q. Here is the large gas plant: this is it, here? *A.* Yes, sir, there is the large gas plant.

Q. There is the large gas plant, there is— *A.* There is the gasometer.

Q. The gasometer; and here is your electric light plant? *A.* Yes, sir.

Mr. GOULDING. I don't know as that will appear on the record.

THE CHAIRMAN. Why don't you mark them A, B, and C?

Mr. BROOKS. I am going to in just a minute.

Q. I am going to ask you this question while it lies in my mind: whether or not the description that is contained in the proposals that I have already referred to is a true description of the three parcels of land? *A.* I believe it to be.

Mr. BROOKS. It is understood that the record is in, and I would like to have this plan go in, too.

(Plan marked "Ex. 2, F.H.B.")

THE CHAIRMAN. What do you mean by the record?

MR. BROOKS. The certified copies of the deeds to which I referred. I do not care to read them.

Q. And since 1859 the Water Power Company have been in possession and in use of these three parcels of land? A. They have.

MR. BROOKS (to Mr. Green). You may inquire.

Cross-examination.

By MR. GREEN.

Q. Mr. Sickman, I want to ask you about the map which is in this book. Is this the map you have just referred to, Mr. Brooks?

MR. BROOKS. Yes.

Q. What is this plan here? Of course, it was not exhibited to counsel. What is this, the plan in the record book? A. It is a tracing of a map of the property conveyed by the receivers of the Hadley Falls Company.

Q. That is, this tracing is not taken from this plan here (showing)? A. No, sir.

Q. But is taken from some plan that you found in the Company's archives when you came there, and which you think, or suppose, with more or less reason, to be the original from which this tracing is taken? A. Yes, sir.

Q. Now this is what scale? Have you got the scale? A. Four hundred feet to the inch.

Q. And this shows, outlined on a scale of four hundred feet to the inch, your gas and gasometer and electric light plant plan? A. It does.

MR. GREEN. Now let us take a plan or plans which are drawn upon a somewhat larger scale (Exhibit 2). Of course, we will have to use our plans in cross-examination, as I think. For the purposes of the inquiry I desire to enter into, this map is on altogether too small a scale for us to understand anything; and I will try to use this plan, if I can trouble you to hold one side of it. Perhaps we can pin it up here. I think this is a tracing from the plan which you offered. This is, if your

Honors please, a blue print from a plan which was offered us by the Company as a part of the offer of sale. I don't know which letter it was. It is Exhibit C.

THE WITNESS. May I offer something?

Q. Yes. A. It is a copy from the C. It is not the original C which was filed with the City. I think it is a copy from it. Apparently, it is a copy.

Q. Well, we will use it as such. We will have all the originals here to-morrow, so there will be no question about it. The Commission, I understand, visited the place. It is, roughly speaking, in this irregular piece of land that your gas plant is all contained? A. Yes, sir.

Q. Within, roughly speaking, the boundaries I have outlined, the railroad on one side, the race-way or canal, as I might speak of it, on the other, and this passageway, or right of way, which comes down past the office. Generally speaking, bounded in that way? A. Yes, sir.

Q. What are the means of access to this plant? The gas plant we are talking about. A. A continuation of this passageway.

By the CHAIRMAN.

Q. What passageway, so that it can go into the record?

A. Of the passageway to the west of the gas office. It would require a larger map to show exactly the means of access.

By Mr. GREEN.

Q. There is a passageway, so called, there, which lies to the west? A. Yes, sir.

Q. It extends from the office, apparently from the office, along the whole westerly boundary of this tract of land? A. Yes, sir.

Q. To whom does that passageway belong, if you know? You are the engineer, are you not, of the Water Power Company? A. Yes, sir.

Q. You draw their deeds, and have in charge all their papers? A. Pertaining to the land.

Q. If you know? A. It belongs to the Water Power Company.

Q. That is, it is not — as I understand, there is no question about it — any public street? A. No, sir.

Q. It is a private right of way? A. Yes, sir.

Q. There is a railroad —

Mr. GOULDING. How much of this is evidence I do not know. If it is merely preliminary, I think this is a good point to object that he cannot state by parole what is a private and what is a public right of way.

THE CHAIRMAN. Let him state the facts.

Mr. GREEN. He can state it in any form that he desires.

Mr. GOULDING. The substance is what we object to, — the substance of his stating what is or is not, in fact, a private or public right of way.

Q. This comes in — I think it is the latter part — about page 14 of the schedule. Now, if you will just point out to us, to the Commission, while I read this description.

Mr. BROOKS. Description of what?

Mr. GREEN. Description of the land occupied by the gas works. It is bounded westerly by —

Mr. BROOKS. It is page 10 in mine.

THE CHAIRMAN. Go ahead. We will find it somewhere.

Q. Where is that passageway, the one that lies along the westerly border of that land, and southerly by the, — or northerly by the Westfield Railroad Branch track? A. (Shows.)

Q. This is the 10-foot reservation shown there (showing)? A. Yes, sir.

Q. Is that passageway included in the description bounded on the passageway, as I see it on this map?

Mr. BROOKS. I think that is a question for the Commission to pass upon. It cannot be for the witness.

Mr. GREEN. I submit that the witness can answer.

Mr. COTTER. We do not think it is competent. Your question calls for the meaning of the description.

Mr. GREEN. No, I ask him, as a civil engineer, — the one, I understand, who drew this plan, — whether this plan as drawn shows the lot bounded upon the passageway, or the passageway included in the description, — a matter of mechanical drawing.

Mr. BROOKS. What earthly difference does it make? We bound it by the passageway: the schedule shows we bound it upon the passageway.

Mr. GREEN. Is that the final ruling of the Court?

Mr. COTTER. Yes.

Q. Where does that passageway go to? Where does it come from and where does it go to,—the passageway west of this land?

Mr. BROOKS. You mean the passageway between it and the Parsons Paper Company?

Mr. GREEN. I don't know whether it is between it or included in it.

Mr. BROOKS. Well, to be used by the Parsons Paper Company and the Holyoke Water Power Company.

Mr. GREEN. Yes.

A. It is a continuation of a passageway from Lyman Street, the public street, to the gas works and the mills of the Parsons Paper Company.

Q. (Showing blue print to witness.) I have here the general plan of the electric light and power plant: it is Exhibit A in the schedule. If you will examine that, Mr. Sickman. Which is north on this plan? I don't see — A. About in that direction (indicating).

By the CHAIRMAN.

Q. You mean running diagonally across? A. Diagonally across, that corner being north (indicating).

THE CHAIRMAN. The right-hand upper corner.

By Mr. GREEN.

Q. About that way,—the upper corner north? A. Yes, sir.

THE CHAIRMAN. You will never get it on the record, you know, the way you are holding it.

Mr. BROOKS. I am perfectly willing they should mark on the plan which is north.

THE CHAIRMAN. Very well.

Q. Well, Mr. Sickman? A. That line is drawn there —

Q. Which line is that? Will you describe that, Mr.

Sickman? What is it the line of? *A.* That would be the most easterly boundary line of the electric light lot.

Mr. GREEN. I have no objections to the witness Mr. Sickman by pencil indicating and making it a part of the plan which is north on there.

Mr. BROOKS. You can indicate it on there.

Mr. GREEN. That would settle it.

THE CHAIRMAN. Very well.

Mr. GREEN. (To the witness.) You can do that. (The witness marked on the plan.)

Q. Now will you describe to the Commission the land which you offer us under this schedule? That is, will you show on this plan where the bounds are? *A.* We begin at the north corner of lands of the George R. Dickinson Paper Company and 30 feet easterly from the water line of the canal; thence parallel with the canal to a point 250.25 feet northerly from the point of beginning,—north-easterly, rather; thence at right angles a distance of 62 feet; again at right angles to the last-described line, 156.42 feet; again at right angles to the last-described line, 48.67 feet; again at right angles to the last-described line, 39.50 feet; again at right angles to last-described line, 71 feet; again at right angles to the last-described line, 10.83 feet; and again at right angles to last line, 29 feet; thence in a southerly direction 58.19 feet to a point in the northerly boundary line of lands of the George R. Dickinson Paper Company; thence along lands of the George R. Dickinson Paper Company, 252.04 feet, to the place of beginning.

Q. Now I infer from your description here and from what you have stated that the land which is at the west along the whole westerly bound here is land of the George R. Dickinson Paper Company. To whom does this land belong, if I may ask,—the rest of this land which lies easterly of all of this tract which you purpose to convey? *A.* The Holyoke Water Power Company.

Q. And on the northerly part, if I may so describe it, along the northerly bound, is on this passageway? *A.* It is.

Q. That is, if you should take the distance of 30 feet

from your canal line, it brings you right up against the northerly line of the building? *A.* I think not quite: the exact distance I am not able to give.

Q. You don't know? *A.* I don't know.

Q. Well, we will pass that, then. But coming now around to the easterly bound, the one which is 62 feet in length and which is east of the wheel house, how close to the wheel house is that bound? *A.* I cannot say here.

Q. Well, it runs pretty close to it, doesn't it? *A.* It comes close; how close I cannot say.

THE CHAIRMAN. Mark on the plan what you have reference to.

Mr. GREEN. Right here (indicating). Here is the wheel house, and here is the bound which passes to the east of this wheel house. I asked Mr. Sickman if he knew how close the land which they have offered us was to that: he says he does not know how close it is.

THE WITNESS. What scale is this?

Mr. GREEN. This is a scale of one-sixteenth inch to a foot.

THE WITNESS. As drawn, it must be 2 feet.

Q. About how much? *A.* At least 2 feet, as it shows upon this plan; but I cannot give the exact distance.

Q. You would not say it is over 18 inches? *A.* Nor would I say it was not 3 feet.

Q. And this land which lies east of the wheel house, all this land in here, is land of the Holyoke Water Power Company, and has been since 1859 or 1860? *A.* Yes, sir.

Q. Now taking this bound here, passing east of the steam-engine room (your Honors will see the line that I point out, the one that is given as 48.67 feet in length), how close to the wall of the steam-engine room does that line place us, if the city has to take that land? *A.* I cannot say here.

Q. A matter of a foot and a half to 2 feet, is it not,—something of that sort? *A.* Apparently, from the drawing; I should say a little more than at the wheel house.

Q. And then again, taking the line which has been outlined of the proposed tract of land lying east of the boiler house, the one which is described as 71 feet in length,—how

close to the boiler house does that line place the City, if it has to take this land? *A.* Apparently, the same distance.

Q. Just about the same way. And the same we may say of this large chimney. This chimney here is the one that is used in connection, of course, with the boiler house, and the line passes very close to the chimney? *A.* Apparently, a greater distance than the line described as 71 feet in length.

Q. Do you know, as a matter of fact, whether the foundations of your proposed building will lie outside of the limits of the land which you have offered to the city? Do you know, as a matter of fact, whether or not the foundations of the buildings there extend outside of the line which you have offered to the city? *A.* I cannot say positive.

Q. Were you in charge of the construction, when they were built? *A.* Yes, sir.

Q. Is there any railroad which supplies or any branch which supplies coal to your people as you now run — I say to your people — to the Water Power Company — for use in the boiler house here? *A.* Yes, sir.

Q. And on whose land is that railroad? *A.* Partially upon lands of the Water Power Company and partially upon lands of the George R. Dickinson Paper Company.

Q. As the railroad passes in there, is there any way — can you tell us, as a civil engineer — that that road can be extended on to land which is offered the City of Holyoke here without passing over your land or land of the George R. Dickinson Paper Company? I mean by "your," of course, the land of the Water Power Company. *A.* I think the tracks — I believe the tracks as now laid cross a portion of this lot. I cannot say positive.

By Mr. Brooks.

Q. Cross a portion of which lot? Of the lot that it is proposed to sell the City? *A.* That we propose to sell the City.

By Mr. GREEN.

Q. You would not say this, Mr. Sickman, would you, until you had measured, that it did not lie some 28 or 30 feet

outside of this tract of land which is offered us? *A.* I would want to examine our plans.

Q. There is, as you are using this electric light plant there—I mean by you, again, the Water Power Company, for whom you work—a coal pocket, so called, into which the coal is dumped from a branch road; that is, the coal which is used in the boiler house here? *A.* Yes, sir.

Q. Whether or not it is a fact, if you know, that that coal pocket, with the exception of a strip about a foot and a half in width, lies entirely outside of the location which is offered the City of Holyoke here? *A.* I don't know.

Q. If it was not possible to put in coal from this spur track which runs over land of the Water Power Company and land of the George R. Dickinson Paper Company, from what distance would coal have to be hauled to be brought for use here at this boiler house? *A.* I don't think I understand your question, quite.

Q. Perhaps it was blind: I will frame it again. Supposing the spur track which your people now use here is so far outside of the location that you have offered the City of Holyoke that it could not be used by the City of Holyoke, in case they were obliged to take this land,—from what distance would the City have to haul its coal? That is, I am presupposing that you are familiar with the railroads and yards and tracks in Holyoke. *A.* About 800 feet, as I take it.

Q. What would be the point that you would suggest to us that we could go to get our coal, supposing we cannot use that spur track which you are now using? *A.* Sargeant Street, west of the canal. The Canal Railroad have tracks—

Q. The what? *A.* The New York, New Haven & Hartford.

Q. Have a spur track? *A.* Yes, sir.

Q. Is there any yard there, anything more than a spur track crossing a public street? *A.* Yes, sir.

Q. What is there there at the intersection of this passageway with Sargeant Street? *A.* A strip of land 40 feet in

width, which may be used and is used for the unloading of car freight.

Q. Used by whom? *A.* By the patrons of the railroad.

Q. I asked you a question about the foundations of the building. I should like to ask you also in regard to the foundations of that stack. Whether or not they extend outside of your proposed location, on to other land of your Company, so that if the City took the land, as you suggest, that the foundations would be outside of their own land? *A.* From this map I can't say.

Q. To call your attention to one thing which you stated, are you not in error — if I might suggest that you think of it again — in what you say about the possibility of unloading coal at Sargeant Street? Does that privilege extend below Appleton Street? *A.* It does.

Q. You think it does? *A.* It does.

Q. By the way, where is Sargeant Street relative to this proposed location of the electric light plant? *A.* About 300 feet south-west.

By Mr. BROOKS.

Q. That passageway to the gas company has been in use by the public for more than forty years, hasn't it? *A.* Yes, sir.

Q. And used by the public generally and daily? *A.* Yes, sir.

By Mr. GREEN.

Q. Well, let us see. You say "used by the public." Outside of yourself, that is, outside of the Water Power Company and its patrons going down there to your gas plant, has anybody else got any business there? *A.* Well,—

THE CHAIRMAN. Well, we don't know whether they have any business.

Q. Do they go there? Whether or not they travel backwards and forwards, up from Lyman Street down to your gas plant? Anybody besides your own employees and customers? *A.* There is such travel.

Q. What travel? *A.* Other than patrons of the Company.

Q. Who? For what business? *A.* To visit the works.

Q. What? *A.* To visit the gas works.

Q. People who come to visit your gas works? *A.* Perhaps one. Again, the Parsons Paper Company also occupy this. It is travelled over.

Q. What do they do with it? *A.* They travel over it.

Q. Where from and where to? *A.* From the public street to their works, from Lyman Street to their works.

Q. For what purpose? What kind of travel? What do they do to use it? *A.* Carrying materials to and from their works.

Q. Outside of the Parsons Paper Company and their employees engaged in their business, and your employees, and people who occasionally visit the works, does anybody else use that passageway? *A.* Not the one you mean,—not that portion of the passageway immediately west of the gas plant.

Q. That is the passageway we are talking about, the one west. *A.* It is a continuous passageway out to its intersection with Lyman Street, near the second level canal.

Q. So far as using the passageway which lies opposite your gas works, is that the limit of the people who use it? *A.* I think it is.

By Mr. GOULDING.

Q. There is one question I would like to have asked. That is, does the land under this passageway, from the point opposite the gas works down to Lyman Street, lie within the boundaries of that deed of Perkins and others to the Water Power Company? *A.* It does.

Q. That is to say, then, that that conveyed the title. They owned the fee? *A.* Yes, sir.

By Mr. BROOKS.

Q. This passageway you are speaking of runs farther than your gas works, doesn't it? *A.* Yes, sir.

Q. Runs into Lyman Street, doesn't it? *A.* Yes, sir.

Q. And whether or not the passageway generally is in use by the public? *A.* It is.

Q. And has been for more than forty years? Now I want you to just refer to your map there. I want to ask you one

more question. How much that is upon this map or plan in this 196th volume of the Hampden County Records was land that was conveyed to the Holyoke Water Power Company by the trustee?

Mr. GREEN. You mean how much is included in the deed?

Q. How much is included, of this plant, in that deed?

A. All lands bounded upon the river, and this dotted boundary line, and so to the river again, that are not in colors.

Q. Everything on that map away from the river that is not in colors is land that was purchased by the Holyoke Water Power Company under the deed that is referred to? A. Yes, sir.

By Mr. GREEN.

Q. Now will you show us on this map where the land of the gas works is? A. That is the gas works. (Indicating.)

By Mr. BROOKS.

Q. And the gas works were in existence at the time this deed was given? A. Yes, sir.

Q. Or some gas works were on the same land? A. Yes, sir.

Q. Now where is your electric light? A. At that point. And the gasometer, No. 3, at that point.

THE CHAIRMAN. If you want those two things preserved in the record, you will have to have them identified.

Mr. BROOKS. I think we will have a tracing of that made and file it later, and have it marked.

THE WITNESS. This is a tracing.

Q. Is it a tracing of this particular plan? A. No, sir.

Q. Is this that has already been put in a copy of the plan that is in the record? A. It is.

THE CHAIRMAN. It is already in, then.

Mr. BROOKS. Then we will leave that just as it is.

THE CHAIRMAN. Does that close this witness?

Mr. BROOKS. Yes, your Honor.

THE CHAIRMAN. We meet at half-past nine to-morrow, I believe.

(Adjourned to Thursday, April 6, 1899, at 9.30 A.M.)

SECOND HEARING.

SPRINGFIELD, Thursday, April 6, 1899.

The Commission met at 9.30 A.M.

TITLE OF PETITIONER.

Mr. MATTHEWS. As we understand this matter now (referring to plan), the Company has shown title under their deed presumably to all this area in the city of Holyoke, excepting the parts marked blue on the plan. That leaves the title to everything in question here in the Company, leaving it to us to show, if we care to or if we can, that they have conveyed away some portion of it.

Mr. BROOKS. The point being, as I understand it, that we still retain ownership and fee of the rights of way that have been spoken of.

Mr. MATTHEWS. From there to there. (Indicating.) We will have those deeds looked up to see if that has been reserved; and, if nothing more is said about it, we understand they have reserved the right. We want to be certain that we are getting a right of way to a public street. Also it is understood that the whole block upon which the electric light plant is situated is owned by the Company.

Mr. BROOKS. May it please your Honors, I am informed that yesterday in my opening I stated to you that the \$4,500 so-called bonus was reserved by the Holyoke Water Power Company for the necessary repairs or renewals to the dam or canals; and it was certainly a misadventure, because it should be the other way. The \$1,500 rental per year is reserved for that purpose.

DOCUMENTARY EVIDENCE.

I will now offer Special Laws, volume 10, page 843, as I have it copied, Acts of 1859, chapter 6. I will read it as I have it copied.

AN ACT

TO INCORPORATE THE HOLYOKE WATER POWER COMPANY.

Be it enacted, etc., as follows :—

SECTION 1. William Appleton, George W. Lyman, Francis Bacon, Augustus H. Fiske, their associates and successors, are hereby made a corporation by the name of the Holyoke Water Power Company, for the purpose of upholding and maintaining the dam across the Connecticut River heretofore constructed by the Hadley Falls Company and one or more locks and canals in connection with the said dam, and of creating and maintaining a water power to be used by said corporation for manufacturing and mechanical purposes, and to be sold or leased to other persons or corporations to be used for like purposes, and shall have all the powers and privileges, and be subject to all the liabilities and restrictions set forth in the thirty-eighth and forty-fourth chapters of the Revised Statutes, and in the two hundred and seventy-sixth chapter of the Acts of the year one thousand eight hundred and fifty-seven.

SECT. 2. The said corporation shall have full power and authority to purchase, take, hold, receive, sell, lease, and dispose of all or any part of the estate, real, personal, or mixed, with all the water power, water courses, water privileges, dams, canals, rights, easements, and appurtenances thereto pertaining or belonging, or therewith connected or which have at any time heretofore belonged unto or been the property of the said Hadley Falls Company, and any other real estate that may be required for the use of said corporation for the purposes contemplated by this act.

SECT. 3. For the purpose of reimbursing the said corporation in part for the cost of keeping said locks and canals in repair, and attending unto the same, it shall be lawful for them, with the consent of the proprietors of the locks and canals on the Connecticut River, to charge, on all descriptions of merchandise, boats and rafts, the same rates of toll as are allowed by law to the said proprietors for similar service.

SECT. 4. The capital stock of said corporation shall not exceed the sum of six hundred thousand dollars, to be divided into shares of one hundred dollars each ; and no shares in the capital stock thereof shall be issued for a less sum or amount, to be actually paid in on each, than the par value of the shares which shall be first issued.

SECT. 5. This act shall take effect from and after its passage.

The date of passage was Jan. 31, 1859.

I offer volume 13 of the Massachusetts Special Laws, page 496, Acts of 1873, chapter 52.

AN ACT

IN ADDITION TO AN ACT TO INCORPORATE THE HOLYOKE WATER POWER COMPANY.

Be it enacted, etc., as follows : —

SECTION 1. The doings of the Holyoke Water Power Company in the manufacture and sale of gas for illuminating purposes in the town of Holyoke are ratified and confirmed so far as they do not affect the rights of persons or corporations.

SECT. 2. The Holyoke Water Power Company may manufacture gas in the town of Holyoke, for the purpose of selling the same for light in said town, with all the rights and privileges, and subject to all the restrictions of Gas Light Companies organized under general laws.

SECT. 3. This act shall take effect upon its passage.

Approved March 3, 1873.

I next offer an order of the Board of Gas Commissioners, of March 30, 1888. I am putting this in, gentlemen, by copy. If you desire the originals, why, we can produce them.

Mr. GREEN. It is all right.

IN BOARD OF GAS COMMISSIONERS,
BOSTON, March 30, 1888.

Upon the petition of the Holyoke Water Power Company for authority to engage in the business of generating and furnishing electricity for light and power in the city of Holyoke, after due notice and hearing.

Ordered, That said Company is hereby authorized to engage in said business in the city of Holyoke, and that said Company within three months from this date procure a plant erected and equipped for generating electricity for light and power with a minimum capacity of not less than three hundred arc lights of nominally two thousand candle-power each.

A true copy.

Attest : WALTER S. ALLEN, *Clerk*.

I offer a vote in the Board of Gas Commissioners, dated July 6, 1888.

IN BOARD OF GAS COMMISSIONERS,
BOSTON, July 6, 1888.

Voted, To adopt the following :—

It is the judgment of the Board after due examination made prior to the 30th of June that the Holyoke Water Power Company has procured an electric plant in compliance with the order of the Board dated March 30, 1888.

A true copy of said vote.

Attest: WALTER S. ALLEN, *Clerk*.

I offer chapter 72 of the Acts of 1889.

AN ACT

TO AUTHORIZE THE HOLYOKE WATER POWER COMPANY TO
INCREASE ITS CAPITAL STOCK.

Be it enacted, etc., as follows :—

SECTION 1. The Holyoke Water Power Company, incorporated by chapter 6 of the Acts of the year 1859, is hereby authorized to increase its capital stock to an amount not exceeding one million two hundred thousand dollars.

SECT. 2. This Act shall take effect upon its passage.

Approved March 1, 1889.

Just a moment, and I think I will put in some further documentary evidence.

MR. GREEN. I understand what you are really offering are the originals in each case. You put in these copies setting forth what is in the original.

MR. BROOKS. Yes. If you have any doubt about it—

MR. GREEN. Oh, no; if you say that you know.

MR. BROOKS. Now I propose to offer a copy of some records here. We have the originals. [Copies shown to counsel for the City.] Perhaps I can just as well put in the originals. [Consultation between counsel.] I will read the copy, with the same efficacy, by kind permission of counsel, as of the original.

A copy of a call for a special meeting of the Holyoke Water Power Company.

HOLYOKE WATER POWER COMPANY.

A special meeting of the stockholders of the Holyoke Water Power Company will be held at the Company's office, in Holyoke, on Wednesday, Dec. 7, 1887, at twelve o'clock M.

1. To see if the Company will vote to engage in the business of generating and furnishing electricity for light and power.
2. To see if the Company will authorize the purchase of the rights, franchises, and property of the Holyoke Electric Light and Power Company.

Per order of the Directors,

E. S. WATERS, *Clerk.*

The next one is Nov. 12, 1887. This is simply a certificate.

HOLYOKE MASS., Nov. 12, 1887.

I hereby certify that on the fourteenth day of November, 1887, I caused to be deposited in the post-office in Holyoke, Mass. (postage prepaid) a printed copy of the above call, addressed to each stockholder at his or her usual place of residence.

E. S. WATERS, *Clerk.*

Pursuant to the above notice, the special meeting of the Holyoke Water Power Company was held at their office in Holyoke, Mass., on Wednesday, the seventh day of December, 1887, at 12 o'clock M.

Gideon Wells moved that the following proposition be acted upon by stockholders present:

Voted, That upon obtaining authority of the Board of Gas Commissioners therefor, as provided in chapter 385, Acts of 1887, this Company engage in the business of generating and furnishing electricity for light and power in all the territory in which it is authorized to supply gas, or in so much thereof as said Board may designate.

A stock vote being called for, the President appointed Gideon Wells, F. A. Drake, and James M. Sickman, a committee to verify the proxies presented and count the votes, and report results to the meeting.

Such committee reported that four thousand seven hundred and twenty-nine (4,729) votes were cast by one hundred and forty-three (143) stockholders, and that all the votes so cast were in favor of the above proposition.

The President then declared such proposition carried.

On motion of Gideon Wells, it was —

Voted, That the Directors be, and they are hereby authorized and directed to cause written application to be made to the Board of Gas Commissioners for authority for the Company to engage in the business of generating and furnishing electricity for light and power in accordance with the vote of the Company; such application to be signed for and in the name of the Company by the President.

Voted, That the Directors be and they are hereby authorized to file with the Secretary of the Commonwealth all necessary certificates and papers in case such authority is granted the Company.

Voted, That the Directors be and they hereby are authorized, upon obtaining the authority mentioned in the previous votes, to purchase on behalf of the Company any or all of the property, licenses, rights, privileges, and franchises of the Holyoke Electric Light and Power Company, and to assume its contracts and obligations.

On motion, voted to adjourn.

Attest: EDWARD S. WATERS, *Clerk*.

I offer now a notice of a special meeting of the stockholders of the Holyoke Electric Light and Power Company:—

A special meeting of the stockholders of the Holyoke Electric Light and Power Company will be held at the office of the Holyoke Water Power Company in Holyoke, Mass., on Saturday, the 3d day of March, 1888, at 1.30 o'clock P.M.—

To see if the Company will vote to sell or dispose of its rights, franchise, and property or any part thereof.

Per order of the Directors,

J. M. SICKMAN, *Clerk*.

HOLYOKE, MASS., Feb. 25, 1888.

I hereby certify that on the 25th day of February, 1888, I delivered to each stockholder a copy of the above-written call.

Attest: J. M. SICKMAN, *Clerk*.

I offer now the record of the special meeting:—

Pursuant to the above call a Special Meeting of the Stockholders of the Holyoke Electric Light and Power Company was held at the

office of the Holyoke Water Power Company on Saturday, the 3d day of March, 1888, at 1.30 o'clock P.M., all the stockholders of the Company being present.

On motion of R. C. Winchester, it was —

Voted, That the Directors of the Company be and they are hereby authorized to sell and dispose of any and all the rights, property, and franchises of the Company to the Holyoke Water Power Company upon such terms as may be agreed between them and the said Holyoke Water Power Company.

Voted to adjourn.

Attest : J. M. SICKMAN, *Clerk*.

I offer the record of a meeting of the directors of the Holyoke Electric Light and Power Company :—

At a meeting of the Directors of the Holyoke Light and Power Company held at the office of the Holyoke Water Power Company, in Holyoke, Mass., on Saturday, the 3d day of March, 1888, at 2 o'clock P.M., there were present, E. S. Waters, president; R. C. Winchester, and J. M. Sickman.

On motion of R. C. Winchester, it was

Voted, That the Company sell its franchises and all its property to the Holyoke Water Power Company, for \$30,000, and the assumption of all its contracts and agreements, and payment of its liabilities, and that the President be authorized to make a contract upon the terms aforesaid.

Voted to adjourn.

Attest : J. M. SICKMAN, *Clerk*.

I offer the agreement between the Holyoke Water Power Company and the Holyoke Electric Light and Power Company.

Mr. GREEN. Mr. Brooks, may I suggest in regard to all these records that are going in, they have not been shown to us, and, of course, we do not know the purpose for which they are offered.

Mr. BROOKS. I will agree that any objections you have to make you may make with the same adequacy hereafter.

Mr. GREEN. I should like to ask what the purpose is of the

records, so that we may know what is expected to be proved by them.

Mr. BROOKS. I suppose it is the result of the ruling of the Commission yesterday that they would hear this evidence and allow the question of your amendment to be decided hereafter. I so understood the ruling.

Mr. GREEN. These are not admitted in any way or are not offered in any way as evidence of values?

Mr. BROOKS. Oh, no; I do not offer them as evidence of values.

Mr. GREEN. Of course we do not know what is coming. I hear something about an agreement —

Mr. BROOKS. Oh, no.

THE CHAIRMAN. Your rights may be reserved.

Mr. GREEN. Yes.

THE CHAIRMAN. They may go in.

Mr. BROOKS. I desire to say now — I am glad my friend spoke of it — we do not offer them at all as any evidence of values.

Mr. Brooks read the following agreement : —

MEMORANDUM OF AGREEMENT MADE THIS SEVENTH DAY OF MARCH,
A.D. 1888, BY AND BETWEEN THE HOLYOKE WATER POWER COM-
PANY PARTY OF THE FIRST PART, AND THE HOLYOKE ELECTRIC
LIGHT AND POWER COMPANY PARTY OF THE SECOND PART.

Witnesseth :

That the party of the first part promises and agrees that upon obtaining leave to generate and furnish electricity for light and power from the gas commissioners it will purchase of the party of the second part all its franchises, rights, and property of every name and nature, and will pay to it therefor the sum of thirty thousand dollars (\$30,000), and will assume all its contracts and obligations, and pay all its debts.

And in consideration as aforesaid, upon the leave aforesaid being granted, the party of the second part promises and agrees to sell and transfer to the party of the first part all its franchises, rights, and property as aforesaid upon the payment of thirty thousand dollars (\$30,000) and the assumption of all its contracts and obligations and the payment of its debts.

IN WITNESS WHEREOF the parties have hereunto set their names the day and year above written.

HOLYOKE WATER POWER COMPANY,

By JOHN B. STEBBINS, *President*.

HOLYOKE ELECTRIC LIGHT AND POWER COMPANY,

By EDWARD S. WATERS, *President*.

Witness :

J. M. SICKMAN to E. S. W., *Prest.*

Mr. Brooks offered the original of the following agreement, the same being marked "Ex. 3, F. H. B." : —

In consideration of thirty thousand dollars paid by the Holyoke Water Power Company and the assumption by it of the debts, contracts, and liabilities of the Holyoke Electric Light and Power Company, the said Holyoke Electric Light and Power Company hereby sells, assigns, transfers, and sets over to the Holyoke Water Power Company all its rights, privileges, franchises, and property of every name and nature, and in consideration as aforesaid the Holyoke Water Power Company hereby assumes all the debts, liabilities, and contracts above named.

THE HOLYOKE ELECTRIC LIGHT AND POWER CO.,

By EDWARD S. WATERS, *President*.

HOLYOKE WATER POWER COMPANY,

By JOHN B. STEBBINS, *President*.

HOLYOKE, MASS., June 27, 1888.

Mr. BROOKS. I offer an extract from the By-laws of the Holyoke Water Power Company, section 5 : —

The Directors may call meetings of their Board in such manner as they shall prescribe ; at any such meetings four shall constitute a quorum for the transaction of business.

They shall have power to purchase and sell or lease land and water power or other property, and to manage the same in such manner as they may deem expedient.

THE CHAIRMAN. Hadn't you better put them all in, Mr. Brooks?

MR. BROOKS. I would as lief do it, your Honors, but I have had this copy made for convenience.

I also offer a record of the meeting of the Directors of the Holyoke Water Power Company:—

At a meeting of the Directors of the Holyoke Water Power Company, held at their office in Holyoke on Wednesday, December 15, A.D. 1897, at 1.30 o'clock, P.M., there were present: Gideon Wells, president, John B. Stebbins, Charles M. Beach, Francis Goodwin, and Samuel D. Smith. On motion it was

Voted, That the sale of the Company's lighting plant be referred to the Executive Committee, with authority to sell the same in whole or part, or to refer the same to a future meeting of the Directors.

Attest: EDWARD S. WATERS, *Clerk*.

I now offer the record of the meeting of the Executive Committee of the Directors of the Holyoke Water Power Company:—

At a meeting of the Executive Committee of the Directors of the Holyoke Water Power Company, held at their office in Holyoke on Tuesday, the 28th day of December, A.D. 1897, at 1.20 P.M., there were present: Gideon Wells, chairman, John B. Stebbins, James J. Goodwin, and J. W. Wheelwright.

On motion it was

Voted, That the Company offer for sale to the City of Holyoke all its Gas and Electric Plant, at such price, not less than the schedule prices thereof, as the President and Treasurer deem proper, such offer to include all the buildings used by the Company in connection with the plants aforesaid, and so much land in connection therewith as they deem proper; also all wires, poles, gas pipes, meters, etc.; also such water power in connection with the Gas and Electric Plants, and on such terms as they deem proper.

On motion it was voted to adjourn.

Attest: EDWARD S. WATERS, *Clerk*.

I now offer Exhibit A, which was mentioned in the proposals (marked 4).

I now offer Exhibit B, which was mentioned in the proposals (marked 5).

I now offer Exhibit C, which was mentioned in the proposals (marked 6).

I now offer Exhibit D, which was mentioned in the proposals (marked 7).

I now offer Exhibit E, which was mentioned in the proposals (marked 8).

I now offer the plans of our gas works, including instrumentalities on the premises as well as the buildings, twenty-two in number (all marked 9).

EDWARD WALTHER, *sworn*.

By Mr. BROOKS.

Q. What is your full name? A. Edward Walther.

Q. And you are a resident of Holyoke? A. Yes, sir.

Q. And your profession is what? A. Architect and civil engineer.

Q. And for how long a time have you exercised that profession? A. Twenty-five years.

Q. And during that time you have of course had experience in the drawing of plans of buildings and machinery and everything else? A. Yes, sir.

Q. For how many years were you City Engineer of the city of Holyoke? A. Six years.

Q. Were you called upon by the Water Power Company to draw plans of the gas works, or a portion thereof, belonging to them? A. A portion of them.

Q. And did you draw such plans? A. Yes, sir.

Q. And of what portion of the gas works did you draw plans? A. I made plans for all outside of the gasometer on Bridge Street.

Q. That is, you made a plan of everything connected with the gas works, with the exception of the gasometer? A. And pipe lines.

Q. With the exception of the gasometer on Bridge Street and the pipe lines? A. Yes, sir.

Q. And how many in number are your plans that comprehend the work you did? Twenty-two, I think. *A.* Well, I can see. As far as mine go, they go up to No. 16.

Q. Sixteen in number? *A.* Yes, sir.

Q. That you comprehend? *A.* Yes, sir.

Q. Whether or not they are true plans of the situation?
A. Yes, sir.

Q. And the location and the buildings and the mechanisms? *A.* Yes, sir.

Q. What does the first of your plans comprehend? *A.* It shows the general location of the different buildings and the gas house lot.

Q. And is anything else comprehended in the first plan?
A. No, just a location, showing the raceway and the river.

Q. Does it show the lot upon which the works are located?
A. Well, virtually, yes; not quite. There is another map that shows that.

Q. Now will you be kind enough to describe to the Commission all that is comprehended by your first plan, giving the details? *A.* We get the office building. Then right back of the office building, or north of it, there are two gasometers; gasometer No. 1, gasometer No. 2.

Q. Very well; go on. *A.* Then we come to the valve room and the water-gas meter room. They connect the pipe shop and the house-meter room and the station-meter room; then the lime room; back of that is the blacksmith shop, and a connection going over into the purifying room.

Q. Purifying building, is it, or room? *A.* Yes, sir, room.

Q. Won't you, instead of saying "room," say "building," where there are separate buildings? *A.* All right, sir. Then there is the wash room.

Q. That is, you have your purifying building? *A.* Purifying building, yes, sir. Then the wash room, the condensing room and the exhaust room.

Q. Are those last all comprehended by one building? *A.* They are in one building; yes, sir. Some are higher than

others. To the east is the retort house, and adjoining the retort house is the water gas plant. Then we come into a steam engine room here. Farther east there is a large oil tank and back of the retort house is the store shed and coal shed. That comprises the buildings. Round the grounds there are a number of tar wells and oil tanks; they are on the ground. I have them as near as I could from the description that was given me.

Q. What is the scale of your maps or plans? *A.* The scale of this map is 10 feet to the inch.

Q. Now will you be kind enough to go on and give, in brief, the construction of these various buildings and their dimensions? *A.* The first building is—you might call it 20 x 30.

Q. Of what construction? *A.* Well, brick construction. Gasometer No. 1 is—outside diameter, the brick work—is 67 feet 6 inches. No 2, 76 feet 9 inches. These are all brick buildings.

Q. Won't you now take the next, and take them right along through in their order? *A.* The little valve room, that is longer on one side. That width is 11 feet by about 15.

Q. The valve room should be "valve building," shouldn't it? *A.* Well, yes; might call it so.

Q. That is of brick also? *A.* That is brick also.

Q. Go on with the various buildings and the various rooms in each building. *A.* The water gas meter room is 20 feet on the outside by about 25.

Q. Yes; that is of brick construction? *A.* That is of brick construction. The pipe shop is 20 x 30. The house meter room is 20 x 25. There is a wood partition in there to set off the station meter, which is 20 x 20.

Q. Which is 20 x 20? *A.* The station meter. The lime room is about 40 x 20.

Q. That is all of brick construction? *A.* That is all of brick construction; yes, sir.

Q. You haven't given us any heights in there? *A.* Well, they are on the sections, each room, I have got a detail plan for.

Q. Oh, yes. Well, then, go on with the various others.
A. The blacksmith shop is 15 feet by 29 feet 8 inches. The purifying room is 30 feet by 85. The wash room is 30 feet by 12. The condensing room is 30 x 30. The exhaust room is 30 x 18.

Q. Is this all brick construction? *A.* All brick construction; yes, sir. The retort house is 63 feet by 75 feet. The water gas plant 51½ feet by 63. The steam engine room is 21 feet 4 inches by 29 feet 8 inches.

Q. That is all brick construction still? *A.* All brick construction. The coal shed is brick construction. That is 80 feet, and on one end 85 feet 9 inches, and the other 68 feet 6 inches. There is an angle in the wall. That store shed No. 1 is of frame construction, 43 feet 3 inches; on one side 68 feet 6 inches, on the other about 58 feet. The oil tank is 24 feet, outside diameter.

Q. Now have you comprehended everything upon the first plan? *A.* I think I have said everything except where I have showed this different.

Q. You haven't given this, have you? (Indicating). *A.* I gave you the store shed.

Q. You gave the dimensions of the— *A.* Of the wooden shed here. The store shed, No. 3, that is 15 feet 3 inches by 30 feet 3 inches.

Q. Now, as I understand it, as you go along over your maps, you have a detail of every room? *A.* Yes, sir.

Q. Then, if that is all that we need to tarry with there, we will go on. Having finished with the general plan, what is the next plan in order? *A.* It is a detail plan of the office building.

Q. Now will you give us the various details that go to make up the office building? *A.* I show here the different floor plans and elevations and sections, details of the inside finish; of course, the size of the building as I gave you before, 20 feet by 30 feet; and it shows the construction; that is, the timber and brick and ceilings and roofs.

Q. Your plans do not show the foundations? *A.* Well,

they show foundations where I could get at them. Here they show foundations as far as I could measure them.

Q. We will prove the foundations by somebody else. Now will you give us the details of those,—the size of the various rooms? *A.* The general office is 11 feet by 17 feet 8½ inches. The superintendent's room is about the same. There are two entrance halls leading into each one of these rooms, and then there is a toilet room and two closets. The section shows the plumbing and the outlet into the tailrace.

Q. What is the scale of this plan? *A.* That is quarter inch; one-quarter of an inch to the foot.

Q. Is there any other detail there? *A.* There is a detail of the door and the window in the office.

Q. What is the height of the office building? Have you got to that point where you can tell me? *A.* The total height to the eaves from the stone wall is —

Q. What do you mean by "stone wall?" *A.* That is the tailrace wall.

Q. That is from the surface of the earth? *A.* Pretty near from the surface; about 14 feet. Then there is a pitch roof.

Q. Fourteen feet to the eaves? *A.* Yes, sir.

Q. Now is there anything else in that connection that we need to inquire about? *A.* The foundation is about 5 feet below the floor.

Q. Is there anything further in the matter of detail there? *A.* No, only that is a brick building and a slate roof.

Q. The contents are not shown on that? *A.* The contents are not shown there.

Q. Then we will proceed to the next plan. What is this here? *A.* This is a photograph of this gasometer No. 2.

Q. What is the next of your plans in order? *A.* Gasometer No. 2. (Referring to plan No. 2, of Exhibit 9.)

Q. And this picture?— *A.* Is a photograph of the building as it stands.

Q. Now will you take the plan of gasometer No. 2 and go through with the various details? *A.* Well, the outside di-

ameter is 76 feet 9 inches, and I have shown in the section the inner wall and the outer wall; the inner wall is to allow the iron gasometer tank to settle down.

Q. What is the inner wall composed of? *A.* Brick.

Q. And the outer wall composed of the same? *A.* Yes, sir.

Q. And is there any distance between the two walls? *A.* Yes, sir.

Q. What is the distance? *A.* About 2 feet and 10 inches.

Q. What is the height of that gasometer? *A.* From the floor to the eaves it is 41 feet $2\frac{1}{4}$ inches.

Q. How high from the eaves up? *A.* Well, the eaves — there is where the roof starts. The lower wall, the depth below the top of the stone, is 21 feet and 1 inch.

Q. Below the top of what stone? *A.* Well, say the floor of the gasometer building.

Q. It is 21 feet below the floor of the gasometer building? *A.* To the bottom of the tank.

Q. And is that comprehended in your height — in your statement of the height? *A.* Not in the statement of the height that I gave you. I gave the outside wall, and this is the inner.

Q. In order to obtain the true height, that should be added? *A.* It has got to be figured separate on account of the smaller circle. It is smaller than the outside.

Q. Well, give us the next detail. *A.* Well, inside of this inner wall, what I called the pit wall, there is the iron tank, the iron gas-holder, which in this case is a double holder.

Q. What do you mean by that? *A.* Well, it slides down — one slides into the other.

Q. Like a telescope? *A.* Yes, like a telescope. The diameter of the upper part of tank is 61 feet 6 inches diameter.

Q. Which tank? *A.* That upper iron tank; and the lower one is 63 feet diameter. The height of each one is 19 feet 10 inches.

Q. Well, proceed with the rest of the detail. *A.* There

are iron columns, six sets, tied together with iron ties, which have the weights on for to support the iron tanks as they move up and down when the gas comes in and goes out.

Q. How many of those are there? *A.* There are six sets, six double columns.

Q. And is this circle with the spokes in it—does that represent those columns that you tell about? *A.* These columns are shown here, and these are the tie-rods connecting them. The spokes, as you call them, show the rafters of the roof.

Q. I speak of spokes because I know more about wagons than I do about a gasometer. What is the next thing? *A.* Well, I have shown on here a larger plan of the valve room, of which I gave you the dimensions, and also the larger plan of the water gas meter room.

Q. Are these separate, the water gas meter room and the valve room? You speak of them as rooms; are they separate buildings? *A.* Yes, you might call them separate buildings. They are adjoining. They are not very high buildings; one is two stories, the other only one.

Q. The next? *A.* The next is the pipe room, house meter room, station meter room, and lime room.

Q. Is there anything to add to what you have already stated with reference to the dimensions? *A.* No, sir.

Q. The contents of these various rooms are not shown upon this particular plan? That comes later? *A.* Do you mean the sections, etc.?

Q. Yes. *A.* No, they will come on another plan.

Q. Now have we gone through with the gasometer plan? *A.* Well, as far as I can explain it, I think we have. Here is the slate roof; here are two sets of wooden rafters.

Q. Do you mean these timbers in yellow that run up diagonal to the observatory? Are those wooden? *A.* They are wooden, except here is an iron ring like a purlin.

Q. Like a what? *A.* Like a purlin, where the rafters come together. On account of the circle becoming smaller, while there are three rafters at the bottom there are only two on the upper part, and these rest on this iron purlin.

Q. You say the roof is of slate? A. The roof is of slate.

Q. We will proceed to the next one. What is No. 3 a representation of? A. No. 3 shows the sections of the pipe room, house meter room, station room, and lime room. It gives the height of the basement and the height of the first floor, the location of piers and pipe as we found them, the location of the station meter.

Mr. BROOKS. I don't know how far it may be considered desirable to go into the detail; I do not care to be burdensome.

THE CHAIRMAN. I suppose you simply want it for the purpose of understanding the plans?

Mr. BROOKS. Yes.

Q. Will you in brief, Mr. Walther, explain plan No. 3? A. Yes, sir.

Q. Give us such details as are material. A. Here is the basement of the pipe shop on the plan, this is the basement of the house meter and station meter, and here is the basement of the lime room.

THE CHAIRMAN. Can we tell by that what that is? There is no name on it.

THE WITNESS. There is the name in the section up here (pointing to the upper part of the plan).

Mr. BROOKS. Why should not we have the word "basement,"—entitle these various rooms?

THE CHAIRMAN. Well, perhaps it would be well enough.

THE WITNESS. It says there "basement 1."

Mr. BROOKS. Yes, but it does not give what the basement plan is.

THE WITNESS. I guess I can mark that.

THE CHAIRMAN. Just write that.

THE WITNESS. Any objection?

THE CHAIRMAN. No.

(The witness proceeded to mark the names of the rooms on the plan as desired.)

Mr. BROOKS. I suppose you can take that and make it more binding later on?

THE WITNESS. Yes, I can bring crystalline ink down and mark it, I think.

Mr. BROOKS. Very well.

(The witness completed the marking of the plan.)

THE WITNESS. It is the same as you see the names up here.

Q. We have got the basement of three rooms, have we?

A. Yes, sir. The first floor plan is shown on the other one; the basement is here. We could not get it all on one sheet and get the same scale. Here is the section. It shows the building cut through the blacksmith shop and the lime room.

Q. Give me the detail of the basement, and then the detail of the various other parts. A. In the basement of the pipe room there is no pier in, except the brick floor.

Q. What are the dimensions of that room? A. That room is 28 feet 4 inches by 20 feet on the outside; 18 feet on the inside, 20 feet on the outside. The basement under the house meter and station meter room is one space, without any partition.

Q. I see that you have a red square represented there. What is that? A. This is a brick pier which supports the station meter.

Q. What are the dimensions of that brick pier? A. 7 feet by 7 feet under the main body, and it projects 12 inches in front, 6 inches on the side.

Q. What are those (showing)? A. Here is a large pipe that shows in section here, where it comes up close to the station meter; and these are gates or valves, as you may call them.

Q. What is the next one? A. The next one is the lime room, which is without piers.

Q. What are the dimensions of that? A. 39 feet 8 inches by 18 feet clear.

Q. What is the floor? A. There is no floor on it. It is the earth in this lime room, and also in this house meter station.

Q. Now, take the rooms above the basement, and give us a detail. A. The dimensions are the same. It shows here what size the timbers are, and there is 2-inch plank laid on top of them.

Q. I don't know as it is of any great consequence, but what is the height of this room above the basement? *A.* The basement is 8 feet 9 inches, and the other one to the eaves is 12 feet 5 inches.

Q. What is contained, what is there, is there anything in there that you desire to call attention to? *A.* There are pipes in there; they use it for the regular gas meter that you get in your house. In here is the storage of the lime, which changes every day.

Q. What do these yellow lines represent? *A.* These are the rafters which form the roof.

By the CHAIRMAN.

Q. What do you call the storage, what name has that building?

By Mr. BROOKS.

Q. What is the name? *A.* I gave the name of the whole by the rooms, and they refer to the regular index.

Q. What is the height of that building? You didn't give the height. *A.* I did give it; I gave the height to the eaves, 12 feet and 5 inches, and the whole height is 20 feet 3 inches.

Q. Is that from the surface of the earth? *A.* No, that is from the floor line, which varies in various parts.

Q. And you have given me the height of the basement?
A. Yes, sir.

Q. Well, what is the next? *A.* This shows the valve room, and the foundation of the water-gas meter.

Q. Is that a separate and distinct building? *A.* Yes. I have shown it before in the smaller scale; but being so much pipe in there, I made this on a larger scale to find my way out.

Q. This is No. 4? *A.* Yes, sir.

Q. Now will you be kind enough to give the detail of that? *A.* The sizes I have given you, I think, before.

Q. You haven't given me any height. *A.* Well, the height varies. The average height is 8 feet 8 inches in the basement. There is where these pipes are.

Q. The height of the basement is 8 feet 8 inches? *A.* 8 feet 8 inches on an average.

Q. What is the height of the building? *A.* This is only the basement.

Q. Oh, this simply represents the basement? *A.* This simply shows the pipe on a little larger scale.

Q. Now this plan of the basement of the water gas room, does this plan of the basement of the water gas room show all the mechanisms that are in that room, this Plan No. 4? *A.* Well, to a certain extent. It shows the pipes and pumps wherever I found them.

Q. Give me the contents of that room so far as this plan shows it in detail. *A.* Well, here is a little apparatus, what they call a regulator. This is in connection with gas pipes, and I cannot explain to you what that is doing. I do not know enough about making gas. This pipe is leading out toward the city, I suppose, and these are the pipes.

THE CHAIRMAN. If you are going on in that way you might as well not do it. We cannot remember about it.

THE WITNESS. I think the superintendent can explain that to you a great deal better than I can. This section shows a well which I found, water and tar.

By Mr. BROOKS.

Q. What are the dimensions of that? *A.* It is 7 feet in diameter, 14 feet 6 inches to the bottom.

Q. Anything else?

By the CHAIRMAN.

Q. What does that refer to? *A.* That is the water gas meter, and these are the piers which carry it.

Q. Which sustain the water gas meter? *A.* Yes, sir.

Q. What are those piers? *A.* Brick construction.

Q. What are the dimensions of them? *A.* 2 feet by 6 feet.

Q. What else is there? *A.* These piers show how they are constructed. There are two piers, and there is the bottom.

Q. What is this that looks to me like a brick parallelogram near these piers? What does that represent? *A.* That represents the centre pier which supports this pipe.

Q. Which pipe? *A.* This pipe here. The brick pier shows here.

Q. Have you shown everything that you consider material there? *A.* Yes, sir.

Q. That you can say anything about? *A.* Yes, sir.

Q. How many piers are there in all in this room? *A.* One double pier and one small pier.

Q. Well, take the next one (No. 5). What does No. 5 represent? *A.* This shows the elevations of the different buildings, pipe room, blacksmith shop and exhaustor room.

Q. Those are three separate buildings? *A.* Yes, sir.

By Mr. GREEN.

Q. You have got two valve rooms. There is the valve room down at the gasometer in South Holyoke. Are these all? *A.* These are on the upper plan.

Mr. BROOKS. That is the gasometer upon the large plan.

Mr. GREEN. I mean the picture.

Mr. BROOKS. I so understand it.

THE WITNESS. Yes, sir.

By Mr. BROOKS.

Q. These are various separate buildings, are they not? *A.* Yes, sir.

Q. Well now, give us the details of your elevations. *A.* The south elevation, which is the elevation of the pipe room, up there, shows the building we have got on the plan, and it shows the elevation of the blacksmith shop and part of the passage behind the blacksmith shop over to the exhaustor room, and it shows the end elevation of the exhaustor room. The other elevation shows the other end, the engine shifts, the purifying room, and the passageway near the lime room in the water-gas meter room and the valve room.

Q. You haven't given me the height of these various buildings. *A.* I have given you some of them. I have given you where we had the section.

Q. That can be discovered from these plans? *A.* Yes, sir.

Q. And this scale is marked? *A.* Upon every one of the plans.

Q. What is this? *A.* This is the west elevation.

Q. The middle picture is the west elevation? *A.* Yes, sir.

Q. And the lower one is the east elevation? *A.* Yes, sir.

Q. Are there any details? *A.* Nothing except the section of the passageway, and part of the section of the tar well, which we have seen on the other plan.

Q. Well, what is the next one? *A.* The purifying room, the washroom and condensing room.

Q. This is No. 6? *A.* Yes, sir.

Q. This shows how many buildings? More than one building? *A.* It is one continuous building, under one roof, but sub-divided into the different rooms.

Q. How many rooms does it show? *A.* The purifying room, the washroom, the condensing room and the exhauster room.

Q. That is all that plan shows? *A.* That is all that shows, all that plan shows,—the basement, the first floor and three sections, longitudinal and transverse sections.

Q. Does this No. 6 show the various mechanisms that are contained in these sections and these various rooms? *A.* Yes, sir.

Q. And wherever your mechanisms are shown, are they drawn to scale? *A.* Yes, sir.

Q. So that the dimensions of every mechanism can be ascertained by the application of a rule? *A.* I should say so, yes.

Q. Now can you tell me from an inspection of this plan what mechanisms are contained in these various rooms? *A.* Well, in the purifying room you have got four purifying pans.

Q. Anything else in the purifying room? *A.* Well, there is what we call a traveller, to lift up the covers.

Q. Is there a system of pipes there? *A.* Yes, sir.

Q. Well, I will call somebody else, perhaps, to go into this detail. Is there anything else? Does this show in the middle plan? Does that show the various mechanisms that are contained? *A.* Yes, sir.

Q. In what? *A.* In the condensing room and exhauster room. Under the corner of the exhaust room there is a little wheel-pit, and a small wheel in there, a 12-inch McCormick Water Wheel.

Q. Anything else that you recall? *A.* No, sir.

Q. About the piers under the various pipes? *A.* They are shown in plan and in section.

Q. Give me their number, and their dimensions, and their office, if you know. *A.* Those piers are of different shape.

Q. How many are there, in the first place? Give me all the piers on this No. 6. *A.* Well, there are 26 as I count them.

Q. Have you counted them all? *A.* Twenty-six supporting the pipes.

Q. Those are under the purifiers? *A.* Under the purifiers.
By Mr. COTTER.

Q. Brick piers? *A.* Yes, sir.

By Mr. BROOKS.

Q. You can't tell me the dimensions except by measurement? *A.* I can say by measurement.

Q. Can't you give me a sort of average? *A.* Yes, I can. Two feet by 7 feet by 1 foot.

THE CHAIRMAN. Why don't you go on with the plans you have in? We could remember it fairly well if you do that.

By Mr. BROOKS.

Q. What room is this? *A.* This is the exhauster or condensing room; this is the wash room; and this is the purifying room.

Mr. BROOKS. I would like to have it shown in the stenographer's minutes what plan this is.

THE CHAIRMAN. We may speak of it as Exhibit C in the schedule.

By the CHAIRMAN.

Q. Up to the present time, Mr. Witness, have you started from the street and gone in? *A.* I have started here and went up there, along this room here.

By Mr. BROOKS.

Q. That don't help us. We have got to fix this for the stenographer, "this room." Where on Exhibit C is the exhaust room? *A.* Corresponding to this room marked "Exhauster Room" on Plan 6.

Q. Now the next room on Exhibit C is marked "Condensing Room." *A.* And marked "Condensing Room" on Plan 6.

THE CHAIRMAN. I won't bother you about it any more. I think I have the idea now.

THE WITNESS. The washroom is here.

By Mr. BROOKS.

Q. You mean the toilet room for the workmen? *A.* Yes, sir.

Q. What other piers are there besides what you have given, and how many? *A.* There are two piers under the—

Q. I want all of them. *A.* What they call the "washer," scrubber. It is a machine.

Q. What are the dimensions of those piers, or about what are the dimensions? *A.* Sixteen inches by 5 feet by 8 feet.

Q. Well, what other? *A.* There is a pier for the condenser.

Q. To support the condenser? *A.* That is a circular pier, 7 feet in diameter and 3 feet high.

Q. And all these piers are of brick? *A.* Yes, sir.

Q. Stone foundations, as I understand it? *A.* That I don't know.

Q. Well, go on with the rest of the piers. *A.* Then there is a large pier which supports the condenser and tar extractor. That is a pier which is arched.

Q. Give us the dimensions of that. *A.* There are 2-foot walls, 13 feet long and 9 feet high. Those are brick walls.

Q. You mean the walls of the pier? *A.* Yes, sir, covered over with an arch. Then there is another pier 2 feet by 3 feet by 8 feet.

Q. Well, give us the rest of the piers? *A.* There are one, two, three, three piers 16 inches square, I should say about 5 or 6 feet high.

Q. What is their office? *A.* They support the pipes.

Q. Are there not some brick piers in the condensing room supporting pipes that you have not referred to? *A.* No, I don't think so. There is a pier here, and this pier there, and these piers here.

Q. Now have you covered No. 6? *A.* Yes, sir.

Q. Proceed to No. 7. *A.* This shows elevations again.

Q. Of what? . Of the lime room, water-gas meter room, house meter room, and the pipe room.

Q. Those various rooms that you speak of are contained in one building? *A.* Well, partly. They are marked on Exhibit C of the Schedule "Pipe Shop," "Meter Room," "Station Meter Room," "Lime Room."

Q. Well, give me the details of that, if there are any. *A.* The only thing I can say, they all have slate roofs. The gas meter room, water-gas meter room, is two stories. I have given you before the height of this floor, 12 feet 4 inches, and the height of the next one is 10 feet 4 inches, wood roof construction, and slate roof, brick building.

Q. Brick building? *A.* Brick building.

Q. You don't know the depth of foundation, perhaps? *A.* No. (Turning to the next plan.)

By the CHAIRMAN.

Q. This is No. 8? *A.* Yes, sir.

Q. What is this? *A.* This is gasometer No. 1.

Q. Point it out on Exhibit C. *A.* Gasometer No. 1 on Exhibit C. (Indicating).

Mr. GREEN. It is not marked No. 1 on Exhibit C. Is it the one that is marked "Gas holder, 67.70 outside diameter"? That will distinguish it.

THE WITNESS. Yes; 67.50 I have got it, it is pretty near right.

Mr. GREEN. Well, that is the way it is marked on Exhibit C.

THE WITNESS. Yes, sir.

By the CHAIRMAN.

Q. What is this? (Pointing to sketch in corner of plan

No. 8.) *A.* This is an iron spider, as we call it, which receives all these iron tie-rods to keep the building from bursting apart. I only made that on a larger scale. (To Mr. Brooks:) This is what we call the gasometer No. 1, and corresponds with the gas holder here marked "67.70 outside diameter."

By Mr. BROOKS.

Q. Gas holder in Exhibit what? *A.* Exhibit C.

Q. Exhibit C of the proposals? *A.* Yes, sir.

Q. Well, is there any detail there? *A.* It shows the ground plan and it shows the section and part elevation. This is not a double brick construction, as on the other one; has only one iron tank in it, which is 60 feet diameter. The height —

Q. Is this what is known as the relief holder? *A.* Well, I always knew it under gasometer No. 1.

Mr. BROOKS. I guess everybody agrees it is what is known as the relief holder.

By Mr. COTTER.

Q. What did you say about the height, Mr. Witness? *A.* The height from the floor of this building to the eaves is 19 feet 9 inches. That is the 1 foot wall that forms the part of the building which you see above ground.

By Mr. BROOKS.

Q. That is above the basement? *A.* That is above the ground. The lower part is 21 feet 9 inches deep, and is of brick construction; on top 24 inches wide.

Q. And that is underground? *A.* That is underground, yes, sir.

Q. We will proceed to No. 9; tell us what that is a representation of. *A.* No. 9 is a representation of the building marked on Exhibit C, "Retort house and water gas plant, and engine room."

Q. What does it show? *A.* Retort house, water gas plant and engine room.

Q. Give us the details. *A.* It shows the outside walls and the partition walls between; they are all brick. It shows the location of the boilers.

Q. How many are there? *A.* There are two upright boilers. Then it shows the location of the retorts on both sides.

Q. How many of those does it show? *A.* There are five complete on one side and four were complete at the time when I measured it on the other.

Q. Nine in all? *A.* Nine in all, with room for one extra.

Q. Room for another one? *A.* Yes, sir.

Q. Well, does this show all the mechanism contained in this? *A.* Yes, sir, as I can see.

Mr. BROOKS. I will put on the superintendent later to show what these are, if it is desirable.

THE WITNESS. (Referring to blue print following the plan last described.) This is the photograph of these same buildings that I have explained.

Q. Of what same buildings? *A.* Of the retort house, the water gas plant and the engine room.

By Mr. GREEN.

Q. Does it show the elevation? *A.* No, not here; not on this side.

THE CHAIRMAN. There are two photographs?

THE WITNESS. No, there is only one.

By Mr. BROOKS.

Q. Well, what does No. 10 show? *A.* No. 10 shows the elevations of the engine room, the water gas plant — the north elevation of those rooms — and the retort house, and sections thereof.

Q. Any details there which you know anything about? *A.* Well, there is iron roof construction.

Q. Iron roof? *A.* Yes, sir, iron roof construction and slate roof.

Q. No. 11; what does that show? *A.* These show the north elevation of these same buildings, and the east and west elevations.

THE CHAIRMAN. You need not stop on those, of course.

Q. What does No. 12 show? *A.* No. 12 shows the construction of the coal shed which is marked "Coal shed" on Exhibit C and also the store sheds.

Q. Can you explain that construction, and with special reference to the delivery of coal, and how it is taken to the boilers? *A.* Here is a large pit which takes the coal as you want that from the cars, and it is carried on a carrier which I show you in the other section, and dumped from there into the coal shed.

Q. Into the what? *A.* Into the coal shed.

Q. What are the dimensions of that pit? *A.* That pit is 11 feet 9 inches by 14 feet 9 inches.

Q. That is below the surface of the earth? *A.* That is below the surface, yes, sir.

By the CHAIRMAN.

Q. What is that constructed of? *A.* This is brick walls and spruce joists,—spruce timbers.

By Mr. BROOKS.

Q. And your pit, of course, is constructed of brick? *A.* The pit is brick; yes, sir. The store shed is all wood.

Q. That is an addition to your coal shed? *A.* Yes, it is just adjoining the coal shed.

Q. Thirteen? (Witness turned to the next plan.) *A.* Thirteen shows only the elevations of the coal sheds, showing the carrier coming up into this part and dumping the coal down.

Q. And is this the coal tower? *A.* Yes, sir.

Q. In which the coal is carried? *A.* Yes, it is carried up and dumped. There is a shingle roof; the whole roof of this building is shingle, except the flat part, which is gravel.

Q. Where does it show on there where your engine is that dumps this coal? *A.* I think the engine you have got up here.

Q. Yes, that is right. That represents the building or the part of the building where the engine stands? *A.* Yes, sir.

(The witness turned to plan 14.)

THE WITNESS. Now this shows the construction of the coal shed and these store sheds and the pit where the coal is dumped from the cars and carried up into the tower. There is another one that shows perhaps a little plainer. Here it is.

Q. No. 15? *A.* No. 15 shows the longitudinal section of the apparatus. Here is your pit and this is the coal carrier, coming in here, and here is the engine; that shows how this works. This is a section of the store shed adjoining it.

Q. Now 16. *A.* Now 16 shows the different tar and oil wells as I have got them marked on the plan — on my first location plan.

By Mr. GREEN.

Q. Well, are they not shown on Exhibit C of the schedule? *A.* Yes, I think they are. I think that the one that I marked "Tar well" here, and the section connected with it, corresponds to this.

By Mr. COTTER.

Q. With what? *A.* With the tar well marked "Capacity 600 barrels." (On Exhibit C.)

By Mr. BROOKS.

Q. Are your tar wells on this plan, No. 16? *A.* Yes, sir.

Q. Where are they? *A.* Here is "Tar well," plan and section.

Q. Is the oil tank shown on No. 16? *A.* Yes, sir; the oil tank is shown here which corresponds with the one on Exhibit C marked "oil tank 24 feet diameter."

Q. Are there any underground tanks shown on this No. 16? *A.* Yes, there is iron, which don't —

Q. Of course they don't appear on this schedule? *A.* They don't appear here, and of course I only got them from the men who knew what they were when they were put in. I did not see them, could not get at them.

Q. I don't know that there is any more detail that I want to put in. Did you measure any depths of foundations? *A.* Well, yes, where I could get them. Where I have them marked on the plan in figures I measured them.

Q. At any time did you measure for the depth of the foundation for the lime room and the purifying building? *A.* We had men to dig there, and I couldn't get at the bottom of the wall.

Q. How far down did you go below the surface of the earth

for foundations? *A.* We went down in the pit about 9 feet, and then ran a rod down.

Q. How far in all? I don't care what you did it with. *A.* I should say we went down at least 15 feet and did not strike bottom at that spot.

Q. That is, as far as you went down the foundations extended 15 feet? *A.* It seemed so, from what you could feel on trying to go down outside the wall.

Q. Of what character were they—stone? *A.* Brick, I should say.

Mr. BROOKS. I think that is all I care to ask.

Mr. GREEN. I might ask you a question there. Have you any direct testimony there from anybody who knows, or do you rely on this?

Mr. BROOKS. I have other testimony.

Mr. GREEN. Then I will not ask about it.

Cross-examination.

By *Mr. GREEN.*

Q. As I understand, on these plans, what is marked in red is brick construction? *A.* Yes, sir.

Q. What you have marked in yellow is wood construction? *A.* Is wood construction.

Q. That is, the rafters— *A.* Floor beams, and all that.

Q. You have marked that yellow, and that means that it is wood? *A.* Yes, sir, that is wood.

Q. Were all these dimensions all ascertained by you from exact measurement? *A.* Yes, sir.

Q. Have you used tracings from other plans in order to draw these plans? *A.* No, sir.

Q. It is all made from your own measurements? *A.* It is all made from my own measurements.

Q. Machinery and all? *A.* Well, yes, machinery and all; except in the retort house, I think, we had Mr. Snow's plan, the way it was built, and I had the plan of constructing this coal carrier.

Q. Something has been said about different buildings.

The two gas-holders, as shown on Exhibit C, or the plan which we have called Exhibit C?— *A.* Yes, sir.

Q. (Continuing)—are separate buildings, of course? *A.* Yes, sir.

Q. Now the rooms called water-gas meter room and valve room are built by using walls of the gas holder as one side of the wall for those buildings? *A.* Yes, sir.

Q. That is, and also — *A.* They are adjoining.

Q. They are adjoining, and the wall of one building is the wall of the other building? *A.* Yes, sir.

Q. And in the pipe shop, meter room, station meter room and lime room, it is all under one roof and is one building? *A.* Yes, sir.

Q. And the wall of that building comprises the wall of the water-gas meter room? *A.* Partly, yes.

Q. Well, it is the same wall, a common wall for the two buildings? *A.* Yes, but it is higher.

Q. The water-gas meter room is higher? *A.* Yes, sir.

Q. But as far as it goes up it uses the same wall? *A.* It uses the same wall, yes, sir.

Q. And the blacksmith shop, so called, is an addition built on to the pipe shop building? *A.* Yes, sir.

Q. Using the wall of that? *A.* Yes, sir.

Q. The exhauster, condenser room, washroom and purifying room are all comprised in one building? *A.* Yes, sir.

Q. The retort house and water gas plant and engine room are comprised in one building? *A.* They comprise one building, only the engine room is not as high as the water gas plant.

Q. Your plans that you have here show the dimensions of each of these various rooms? *A.* Yes, sir.

MR. GREEN. I do not think that there is anything about this that I care to ask any further.

THE CHAIRMAN. Have you finished this witness, Mr. Brooks?

MR. BROOKS. Yes, your Honor, for the present. Mr. Sawin.

WALLACE E. SAWIN, *sworn*.

By Mr. BROOKS.

Q. What is your full name Mr. Sawin? *A.* Wallace Eugene Sawin.

Q. You are in the employ of the Holyoke Water Power Company? *A.* I am.

Q. And have been for how many years? *A.* About twelve.

Q. And in what capacity? *A.* Assistant civil engineer and draftsman.

Q. And you have made a certain plan with reference to the gas plant that is in question? *A.* Yes, sir; the Bridge Street gasometer.

Q. The Bridge Street gasometer. *A.* This is the sketch of the pipe lines that I made. (Referring to one of the blue prints in Exhibit 9.)

Q. What plans did you make that pertained to the gas works? *A.* I made the map of the city of Holyoke showing the gas mains and the Bridge Street gasometer, called No. 3 holder; that is, in relation to the gas works.

Q. Yes, that is what I mean. I am not taking the electric works now. This plan is not numbered, is it? *A.* That is just the same as your exhibit; I don't know whether it is A or B. This is the same thing that was filed.

Q. Is Exhibit A there? *A.* I think it is.

Q. A or B? Well, I will find it. I have it, Mr. Goulding. Exhibit E, is that the one? *A.* That is the one.

By Mr. MATTHEWS.

Q. Is that just the same as this? *A.* It is just the same.

By Mr. BROOKS.

Q. Is this the same as that? Are the two similar? *A.* They are just the same.

Q. Both copied from the same thing? *A.* Yes.

Q. You made them both, did you? *A.* They are both blue prints from the same drawing.

Mr. BROOKS. Now I don't know how much, Mr. Goulding, we want to go into the pipe lines here.

Mr. GOULDING. We want to get some general terms to put on record.

Mr. BROOKS. Do you want me to go into what streets the pipe lines run through?

Mr. GOULDING. Get the different sizes, etc.

Q. Can you tell me, from an inspection of the plan, how much pipe of the various sizes you have? A. That is all listed, Mr. Brooks. I can't remember it.

Q. Can you by reference to any memorandum — can you tell me? A. Not that I have here.

Mr. GREEN. What is it you want to know, Mr. Brooks?

THE WITNESS. That was all listed and filed.

Mr. BROOKS. The amount of pipe line of the various sizes.

THE CHAIRMAN. Is there any question here as to the length of the pipes, etc., and the different sizes? Are any of those questions coming up here?

Mr. GREEN. Mr. Matthews has some questions in regard to that that he wants to ask.

THE CHAIRMAN. Very well, then, let them go over it.

Mr. MATTHEWS. I don't know that there will be any dispute. We should want the data stated.

Q. You have in your possession memoranda by which you can give us the lengths of the various pipe of the various sizes? A. I haven't in my possession now; I have in the office.

Q. That is what I mean. A. Yes.

Q. You have at your office? A. Yes, sir.

Q. Well, will you be kind enough, or will somebody be kind enough, to send for that and get it down here so we can put it in later? I will go on with something else. Perhaps I can get at it in this way. Did you make up the schedule of the pipe line, of the various sizes, that went into the statement that was filed with the city of Holyoke? A. I did.

Q. Is the statement of the amount and sizes of pipe therein contained a correct statement? A. Yes.

Mr. GREEN. Just a moment. How does he know?

Mr. BROOKS. Because he made it up.

Mr. GREEN. I know; but what did he make it up from?

Mr. BROOKS. I suppose he made it up from measurements.

Q. How did you make that up? A. That is compiled from the drawings that are kept from time to time as the pipe are put in; the pipe is entered on the drawings, as they are laid.

Q. You say that the statement of the amount and sizes and dimensions generally that were contained in the schedule is correct?

Mr. GREEN. I object to that. Just a moment.

THE CHAIRMAN. Well, let us have those drawings, as he calls them, if the respondent desires them.

Mr. BROOKS. Do you really wish those?

Mr. GREEN. Why, certainly.

THE CHAIRMAN. Haven't you examined this question yourself?

Mr. GREEN. We should like to see these plans and drawings and the things from which they have taken it.

THE CHAIRMAN. Then you better send for them, of course.

Mr. BROOKS. Well, I don't quite see, may it please your Honors, how it makes any special difference, if, as has been suggested, we furnish everything contained in our schedule. If we don't furnish it, I suppose they won't have to pay for it.

THE CHAIRMAN. Well, meantime we will use your plan.

Mr. BROOKS. What do you mean by the plan—the schedule?

THE CHAIRMAN. This paper here, yes. You will have to verify it by these other plans. You can use it as a chalk.

Q. Can you get those other plans down here? A. Yes, sir, they are in Holyoke.

Q. Can somebody be sent for them so we can have them this afternoon? A. I can get them at noon if you wish.

Mr. BROOKS. Well, very well.

THE CHAIRMAN. You can use the plan for all practical purposes now, Mr. Brooks, upon the understanding that you will verify it afterwards; so you need not be delayed.

Q. Does this plan show the amount and dimensions of the various pipe that was in the streets of the city of Holyoke at the time this schedule was made up? *A.* Yes, sir.

Mr. GREEN. I object to that.

THE CHAIRMAN. Let him state that, and if he cannot show it —

Mr. GOULDING. We insist upon it.

Mr. BROOKS. We have got the right to show the correctness of this plan.

THE CHAIRMAN. It seems to me to be a distinction without a difference. You propose to verify this?

Mr. BROOKS. Certainly we do.

THE CHAIRMAN. Go ahead and put it in.

Mr. BROOKS. If we don't, I suppose you can deal with it later on.

Q. Now will you be kind enough, taking that, to tell us how much pipe of the various sizes, how much gas pipe, there was in the streets of the city of Holyoke at the time those proposals were made? That is not the original. Let me have that original schedule. (The original schedule was produced.) You had better take that because that is the one that was filed. *A.* Well, it is in two items. Pipes on the works, and the street mains.

Q. What is that? *A.* I say it is made up into street mains and pipes about the works.

Q. Can you separate those? *A.* Yes.

Q. Now on what page do you find that in your schedule? *A.* Page 2, under the schedule of gas-works property, marked "street mains."

Q. Now will you be kind enough to separate the various kinds and dimensions of pipe? *A.* The pipe around the works, about the gas works, 820 feet of 12-in. gas main. The street mains: 440 feet of 15-in., 10,475 feet of 12-in. main, 5,964 feet of 8-in., 32,033 feet of 6-in., 28,781 feet of 4-in., 68,219 feet of 3-in., 1,953 feet of 2½-in., 7,895 feet of 2-in., 2,824 feet of 1½-in., 6,776 feet of 1¼-in., 3,127 feet of 1-in., and 30,000 feet of service pipe.

By the CHAIRMAN.

Q. How much is the whole of it? *A.* Well, it is not totalled.

Mr. BROOKS. I think something over about 33 miles.

By *Mr. BROOKS.*

Q. Now give me the pipes about the works. *A.* That is the first one I gave you.

Q. You gave me — *A.* 820 feet of 12-in. gas main.

Q. Now go on — I will put this right in now — with the water pipe. *A.* 680 feet of 6-in. water main, 621 feet of 4-in. water main, 85 feet of 3-in. revivifying pipes and valves, 792 feet of 2-in. and 1-in. water pipe, 1,449 feet of steam pipe from $\frac{3}{4}$ -in. to 3-in. valves, 393 feet of 3-in., 4-in., and 6-in. tar pipes, 524 feet of $\frac{1}{2}$ -in., $\frac{3}{4}$ -in., and 1-in. gas pipe, including steam traps, steam pot, and radiators.

Q. Now, while I am on this, I will go into the gates with you. *A.* 36 of 3-in. gates, 21 of 4-in., 26 of 6-in., 5 of 8-in., 5 of 12-in., 1 of 16-in., and 94 gate boxes.

Q. Now will you take the plan next after your pipe plan? What does the plan that you are observing now represent?

A. That is the ground plan of the Bridge Street gasometer, with a section of the tank, the brick work of the tank.

Q. Will you be kind enough to give us the details of that plan? *A.* Well, it is a circular building.

Q. Brick? *A.* Brick, yes.

Q. How many brick walls? *A.* The building itself has one circular wall, and tank.

Q. And the circular tank is built of what? *A.* Brick, very heavy.

Q. And the space between the two walls? *A.* Of the tank?

Q. Yes; that between the tank wall and the other wall. *A.* 89 feet.

Q. No, no. *A.* In diameter. Oh, in here?

Q. Yes; the distance between the outside wall and the wall of the tank. *A.* Five feet.

Q. Now what does that contain in the way of mechanism?

A. Well, that contains a large brick tank, with an iron holder that runs up and down in it, to be filled with gas.

Q. This plan is drawn to a scale? *A.* It is.

Q. What is it? *A.* A quarter of an inch to the foot.

Q. What is this brick square that I see? *A.* That is the valve building.

Q. What is that? *A.* That is where the gas main enters, and the valves are in there for shutting off and filling the gas tank.

Q. What are the dimensions of this gasometer? *A.* The building itself inside is 100 feet and 4 inches in diameter, the tank is 89 feet in diameter inside, and the holder is 43 feet 6 inches radius.

Q. What do these dotted lines represent running from between the white circles? *A.* Those are the iron trusses running from the columns.

Q. And what is the object of that? *A.* To strengthen it.

Q. Stability? *A.* Yes, sir.

Q. Is there anything farther there? Take the next one. What is this? *A.* That is a scale elevation of the same, the gasometer, showing the interior and exterior of the building.

Q. Well, I don't know that there is any detail there. *A.* That is the mechanism; the gas main comes in from the street here.

Q. In — what do you call this? *A.* That is the valve-room.

Q. Into the valve-room? *A.* Yes, sir. This circle is the end view of the pipe coming in; it comes down through and fills the tank.

Q. What is that section? *A.* That is a section of the valve-room.

THE CHAIRMAN. What do you call this plan — any number?

MR. BROOKS. He hasn't it numbered.

THE CHAIRMAN. Yes, very well.

MR. BROOKS. He can number them.

THE CHAIRMAN. Perhaps it would be better.

MR. BROOKS. Just number that. You can put it on later.

THE CHAIRMAN. Yes. It is all right. It is 17 on this book. These plans are going to be kept in this book together?

MR. BROOKS. Yes, sir.

THE CHAIRMAN. Very well; then call that 17, I would. This plan you have just been talking about is 19.

MR. BROOKS. The plans with reference to which you are testifying now are 17, 18, 19, and 20.

THE WITNESS. And 21, I believe.

MR. BROOKS. And 21. From 17 to 21, both inclusive.

Q. Coming now to plan No. 20, what does that represent?

A. This is the roof plan of the gasometer; these are the rafters, showing the truss, with a large drawing of the truss.

Q. It is the plan of the gasometer building, is it? A. Yes, sir. This is the roof plan of the Bridge Street gasometer.

Q. Well, it is really the gasometer building, I suppose?

A. Yes.

Q. Or the building in which the gasometer is contained?

A. The same thing.

Q. What do these strokes represent here? A. Well, that is a detail at A, an enlarged sketch of this part right in here.

Q. Which part? A. Right here at the eaves. This is an enlarged drawing of the truss which is shown here; an iron rod.

Q. Shown on the left of plan No. 20? A. A section of the roof truss, it says here; detail at A; and detail at B showing this one here; and detail at C at the top.

Q. When was that built, do you recall? A. No, I don't. That was 1881 or 1882, I think.

Q. What is plan No. 21? A. That is the detail of the cupola of the gasometer building, shown on the elevation in the smaller drawing.

Mr. BROOKS. That is all I care to examine Mr. Sawin about with reference to the gas plant.

THE CHAIRMAN. If you are going to recall him, perhaps the gentlemen would like to cross-examine him.

Mr. BROOKS. I shall call him with reference to the electric light plant plans later.

Cross-examination.

By Mr. GREEN.

Q. Wherever your plan is marked in red, that shows a brick construction? A. Yes, sir.

Q. And yellow shows a wood construction? A. Wood.

Q. And, in order that I may understand more fully before we examine the plans which are to be given to us,—as I understand it, the exhibit which is made up as showing the location of your pipes in the street, and the plan that you have here showing that same location, is made from the drawings in the possession of the Company? A. Yes, sir.

Q. And plans? A. They are compiled from the gas main drawings that are in possession of the Company.

Q. You didn't make any measurements through the streets? A. No, sir.

Q. Simply took the plans and drawings? A. Not at that time, only at times before.

Q. You have some? A. Oh, yes, I have made some measurements.

Q. But not all? A. Oh, no.

THE CHAIRMAN. I think that that is the usual practice in these cases. I do not know so much about gas companies, but the water companies elaborate the plan from time to time in the Company's office, and when they come to the question of measurements they have to follow the plan. That is what they have done here.

Mr. GREEN. We expect that is so. We desire to see the plans, however, so as to verify certain facts that we have in mind, not that we question it at present.

Mr. BROOKS. If you are through, I think I will let Mr.

Sawin go and come back later, because he will have to go and get those plans.

THE CHAIRMAN. He need not necessarily get the plans to-day.

Mr. BROOKS. I should like to have it go in as consecutively as it can. I think that is all for the present.

WILLIAM H. SNOW, *sworn*.

By Mr. BROOKS.

Q. What is your full name, Mr. Snow? A. William H. Snow.

Q. And you are a resident of Holyoke? A. I am.

Q. And what is your business? A. Superintendent of the gas works.

Q. Of the Holyoke Water Power Company? A. Yes, sir.

Q. And for how long a time have you been such superintendent? A. Since 1890.

Q. Mr. Snow, were these plans made under your supervision? Were the details made under your supervision, or the details obtained — I will change it — under your supervision? A. They were that.

Q. Now will you be good enough to take the various plans containing the various mechanisms and briefly go through with what the various rooms contain of your gas works?

THE CHAIRMAN. How long had he been superintendent? I did not quite —

Mr. BROOKS. Since 1890.

THE CHAIRMAN. He had been in their employ before that?

Mr. BROOKS. Yes, sir.

Q. For how long a time before your superintendency were you in the employ of that gas company? A. I went to work for them in 1875.

Q. Now will you be kind enough to take these plans and go through with the details of the various rooms? A. That is, you simply want the apparatus?

Mr. BROOKS. Yes, sir; that is all I care for.

THE CHAIRMAN. Incidentally, would it be worth while to ask him to state as he goes along what they do with the different things? Perhaps some of us would like to know how gas is made.

Mr. BROOKS. Very well.

Q. You explain to the Commission the various mechanisms and their uses and their purposes. A. I will commence and follow the apparatus, following the course of the gas as it is being made, following it through into the holders. Commencing with the water gas apparatus, that consists of four wrought iron shells, called the generator, in which the gas is made; the carburetter, in which the gas is enriched; the super-heater, in which the oil gas and water gas become fixed into a permanent gas, and the scrubber, in which the tar that is carried along by the gas is washed out. There is incidentally a smaller tank called the wash-box, which answers for a self-acting valve. It is a seal, which allows us to open the apparatus as we may need. The pipe going down into the water seal in this washer prevents the gas coming back into the super-heater, carburetter and generator. This apparatus is operated from what is called the operating floor, an iron floor that is about on a level with the top of the generator. In connection with this there is an hydraulic elevator used for getting the fuel up on to the operating floor. In connection with the whole apparatus is the steam engine and the fan blower and the oil pump. I don't know how far you want me to go in this.

THE CHAIRMAN. Go on.

THE WITNESS. The draft is a forced draft furnished by the fan blower. The fire is in the generator. I could describe that more intelligently to you on detail plans showing those pipes and connections and their relations.

Q. Just take your plan. A. (Referring to plan.) This shows the blast pipe connections —

By Mr. COTTER.

Q. What plan is that? A. This is on plan 9. It shows

the blast pipe connections from the fan blower coming in overhead down to underneath the fire in the generator. The process is starting engine and blower, blowing up the fire, so-called, the gas being carried on through the connection from the top of the generator into the carburetter. The carburetter is filled with fire-brick work built up checker work, like. At the top of the generator there is an air connection from this blast pipe through which air is introduced, meeting the hot unconsumed gas coming from the generator, igniting that, the flame from that gas going down through the checker brick, heating it up the necessary degree of heat. At the bottom of the carburetter is another air connection, allowing introduction of air at that point, to ignite any gas that may be unconsumed when reaching that point, that furnishing the heat and sending the flame up through the super-heater, which is also filled with this checker brick, fire-brick work. The operation of making the gas in that apparatus is, first, blowing up, so-called, until there is a proper degree of heat both in the generator through the fuel of it—the body of it—and the fire-brick work in the other two parts of the apparatus. Then meanwhile there is a valve that we call the stack valve on top of the super-heater, which is opened through this blowing, the draft going out through the smoke stack in the roof. When the proper degree of heat has been arrived at, the blast is shut off, the stack valve closed, steam introduced into the generator beneath the fuel; that steam forcing its way up through the incandescent fuel is broken up into the hydrogen and oxygen of which it is composed, forming the hydrogen gas, the oxygen combining with the carbon, forming carbonic oxide gas, those going along. The oil is introduced at the top of the carburetter at the point where hot gas comes from the generator, and the oil and gas thus follow down through the openings in this checker brick work. That is converting the oil into a gas, and further, through the super-heater, making it into a fixed gas. It is very easy to make a vapor of oil, but it is very difficult to make a permanent gas of it. That is the object of such a length of heated surface that it must come

in contact with to be converted into a permanent fixed gas. Then the plan shows here this wash-box which answers as the seal, preventing the gas coming back when we have the stack-valve open. From there it comes into the washer, coming into the bottom of the washer on the other side back of it. There is a stream of water comes into the top of the washer. In that washer there is a series of trays made of wooden slats. The water comes in at the top, forming a shower, a spray, working on down through those slatted trays, the gas going up through those slatted trays at the same time, washing out what tar may have been made and carried over with the gas. From that washer, or scrubber, the gas comes through a small section of 12-inch pipe into a section of 16-inch pipe out into the relief holder.

By Mr. GOULDING.

Q. Does the tar come from the oil, or from the gas made from steam? A. From the oil altogether. This plan shows where this 16-inch pipe comes out—general plan of the works.

By Mr. COTTER.

Q. What is the number? A. Index plan, I think. (Continuing.) Coming out into the relief holder, or holder No. 1. In the coal gas part of the plant the retort house adjoins the water gas building. In this building we have capacity or arrangement for ten benches of six retorts in each bench. There are nine of those benches fitted up, one arch vacant. Do you wish a description of the process of this?

THE CHAIRMAN. I should like to hear it. I do not want to ask for a thing that everybody knows but myself; but still, at the same time—

Mr. GOULDING. There are some of the rest of us with you.

THE WITNESS. The coal gas is manufactured by what is called carbonization, the principle being to bake the gas instead of making gas by combustion. These retorts that we have are retorts that are 15 inches high, 30 inches wide and 9 feet long, inside dimensions. Those are of fire clay, oval shape. They are set, six of them, in one arch or bench.

There is one central fire that heats that whole bench. This fire is in what is called a half-depth semi-regenerative or recuperative furnace. The principle of that, instead of trying to get the heat from the fuel itself, is to convert that fuel into a gaseous form and burn the gas; that is, you are making a gaseous fuel. The coal is placed in these retorts when they have been heated up to a proper degree of heat and left in there a proper time to be thoroughly carbonized or baked. The gas and tar and whatever volatile substances, parts of the coal, have been forced out of it.

On each of these retorts is an iron mouth-piece with a self-sealing lid. These mouth-pieces are connected to a stand-pipe, which is connected with the bridge pipe, and that to a dip-pipe which goes into the hydraulic main. This hydraulic main answers the same purpose as our wash-box in the water gas part. This hydraulic main is with us a D-shaped pipe, and with the curve of the D setting in a saddle, the straight part of the D in the top part. That is filled partially with water and liquid tar; and these dip-pipes dip down into that, so that the gas as it goes into the dip-pipe must bubble up through this water, and when we open the mouth-piece to a retort, not come down into the retort. That pipe, being down in the water, seals it so that the gas cannot come back and ignite and burn at the mouth-piece. From the hydraulic main the gas goes into the 12-inch pipe called the sub-main, and from there follows around, on the whole of one side, two-thirds or three-fourths of another side and half of another side, forming a long stretch of pipe, which is so put in for the purpose of acting as a partial condenser. The gas as it comes from these retorts is very hot. These retorts are run up to a cherry heat, and the tar that is in that gas is held in suspension. The gas as it comes from these retorts looks like so much smoke, and that is colored from the tar which is in suspension. This gas must be cooled from this high degree of temperature and condensed, the tar extracted, with the ammonia and carbonic acid and sulphur. But the condensation from this long run of pipe which the gas comes in — the point of that is, if you cool your

gas too quickly and throw down your tar too suddenly, it carries down part of your illuminants from the gas. It needs to be a gradual cooling down and condensation of the tar coming out of the gas, in order not to have it impoverish the illuminating part of the gas. From the retort house the gas goes into the exhauster room, on plan No. 6. On the index plan is shown the pipe as it comes directly across from the centre of the retort house into the exhauster room. That is an overhead pipe. While on this general plan I might say right here that as the gas comes from the retort house to the exhauster the two gases are combined. The 12-inch pipe comes from the gasometer No. 1, as it is marked here, or relief holder, through cellar of station meter, or the water gas meter into the cellar of the exhauster room. These two gases are combined at the exhauster and sent through the rest of the apparatus in the works together. From the exhauster room, after the gas going through this exhauster,—which is the same as a fan blower, only that it is being used as a suction pump and forcing the gas instead of forcing air,—it goes into a circular multi-tubular condenser. It passes from that into an oblong multi-tubular condenser. That is all cooling the gas and condensing it and throwing down the tar by scrubbing, the gas coming in contact with the surface of the tubes and turning around the corners in the two multi-tubular condensers. From the oblong multi-tubular condenser the gas passes into the tar extractor, the province of which is to catch any of the light oils or tar that may have passed by the other two condensers. I don't know whether there is a plan of the inside of that or not.

By Mr. BROOKS.

Q. Of what? A. Of the tar-extractor. That tar-extractor is arranged with some boxes that are about 5 feet square, as I remember. There are boxes in that, about — I won't attempt to say; they may be 8 inches and they may be a foot deep; no matter. But those boxes are water-tight, arranged to hold the water and tar; and on the bottom of each box that is above the lower box there are iron plates attached that dip down into the water in the box underneath, so

that the gas, as it comes through here, has to bubble down through the water under each of these plates before it can pass out of the top of that tar-extractor. From there the gas follows into the Standard scrubber, or washer. That is to take out what ammonia there may be in the gas,— water and ammonia having great affinity for each other. This is so arranged that the gas must pass through very closely a series of wrought-iron plates that are kept continually wetted. Those are on a shaft that is revolving and carrying the plates through water all the time, keeping them continuously wetted. From the Standard scrubber, or washer, the gas passes into the purifiers— first, into the centre seal, which is really an 8-way valve, so arranged that it sends the gas through any three of the purifying pans that we may wish in a certain order. We cannot keep out any three of them, but there is always a combination of three that the gas is being sent through. These pans are arranged with a set of slatted trays, made of wood, that cover over the whole inside surface of the pan. Those sit up on little horses or racks, like, above the bottom of the pan. Upon this slatted tray we put lime. The gas comes into the bottom of that pan, and works its way up through that body of lime, the lime combining with the sulphur and the carbonic acid gas that are in the gas. We have the gas go through three of these pans in succession, giving us a fourth pan; so when that is foul we can remove the cover, take out the lime, and put in some fresh, and have that ready to throw into the combination in its turn. From these pans the gas is all ready for commercial purposes. All the impurities have been taken out of it, and all the illumination is supposed to have been put into it that is necessary. It goes from these pans into the station meter. The station meter and the water gas meter are almost exactly the same. The capacity, the construction, inside construction, is the same. The only difference in our use of them is, in the water gas meter we measure only water gas, and in the station meter we measure both water gas and coal gas. The gas goes to the distributing holder, and from that through the out-let and through the governor, onto the street.

Q. When was that water gas plant built, and the mechanisms installed? *A.* 1896.

Q. What is the capacity of your water gas plant? *A.* You mean what I find the actual capacity, or guaranteed capacity?

Q. I will ask you the actual capacity? *A.* We have been able to make 700,000 feet a day.

Q. Seven hundred thousand cubic feet a day? *A.* That is, 24 hours.

By the CHAIRMAN.

Q. How long does it take to manufacture that, from the time you first start in till it becomes commercial gas? *A.* Do you mean to when it goes into the street?

Q. I mean from the time you begin. *A.* Well, it will be perhaps a considerable of a guess, but I should imagine from the time we start the steam in the generator there, that we had gas on the street inside of 15 minutes.

By Mr. BROOKS.

Q. What is the capacity of your coal gas plant in cubic feet? *A.* 500,000. May I modify that?

Q. Yes, certainly. *A.* That is a conservative capacity. There could be easily made 600,000 feet.

Q. Take the last year or two years, what has been the product that you have sold, in and out? *A.* During the year? Last year we sold about 70,000,000. I don't recall just the figures of the year before.

By the CHAIRMAN.

Q. How much is that a day, on the average?

By Mr. BROOKS.

Q. Will you, Mr. SNOW, answer that question? *A.* Take our send-out from the long days of the summer to the dark days in the winter, it varies considerably in the average amount, from perhaps in the neighborhood of 100,000 on a Sunday, in the longest days in the summer, to 355,000, our biggest send-out last winter in one day.

Q. Now your water gas plant was put in in 1896 and the machinery installed then. Whether or not the structures were erected with duplication in view? *A.* Yes, sir.

Q. What have you to say with reference to the capacity of the structures for duplication? *A.* We can double up the amount of our capacity of gas-making in that building.

Q. And do you have any of your mechanisms duplicated there at the present time? *A.* There is nothing in there duplicated at present.

Q. What is your water-gas making apparatus known by in name? *A.* Do you mean the style or manufacturer?

Q. Manufacturer. *A.* Humphreys & Glasgow of New York.

Q. Is this apparatus specially designed to use coke and heavy oils? *A.* Yes, sir.

Q. What is the advantage of that design? *A.* We can get heavy oils cheaper than we can light oils, naphthas, and by being able to use coke we are not tied up to one form of fuel.

Q. How many of your retorts are in use? *A.* Do you mean all we use or can use?

Q. Well, that you actually use? *A.* We are using four benches of retorts to-day. We have used nine.

Q. I forget the number of benches of retorts. *A.* Ten altogether.

Q. Did you make up the schedule of the gas mechanisms that was filed with the city? *A.* It was made up under my direction.

Q. That is what I mean. Well, whether or not the mechanisms therein mentioned are a true statement of the mechanisms on hand at the time? *A.* It is.

Q. And of course they are there still? *A.* Yes, sir.

Q. Will you be kind enough to take this schedule as a memorandum, and tell us of what mechanisms your plant consisted, and now consists? *A.* You want simply the mechanisms?

Q. Well, give it all to us. *A.* Land and buildings?

Q. No, let the buildings and the land go.

THE CHAIRMAN. Do you want that read to us?

Mr. BROOKS. I don't know but it ought to go in the report. If it is so understood, it might be copied.

THE CHAIRMAN. Do you think it would be of any service?

Mr. BROOKS. I don't know as it would, only as becoming a part of the record.

THE CHAIRMAN. Unless some objections are made, we will assume that it is correct; but, at the same time, it might be worth while to examine this witness in some detail, in order to give us all the light you can on the general use of these machines.

Mr. BROOKS. I will do so. I do not know how far to go. Every mechanism, as I understand it, is down on the plan, and I can go over the plans, and ask him the utility of the various mechanisms, or go into the schedule. I will be guided entirely by the judgment of the Commission. I am frank to say I don't know where to stop. Is it desired that I shall go into the dimensions of the various mechanisms? I think they will show upon the plan. Am I right about that, Mr. Snow, that the dimensions of the various mechanisms appear upon the plan?

THE WITNESS. They are there in scale. I don't know whether they are all down actually in figures.

By Mr. BROOKS.

Q. It is ascertainable by a rule? A. Yes, sir.

THE CHAIRMAN. I think we had better let it go in, in this way (to be copied in the record), and if you desire to ask him any question you can recall him.

Books of Petitioner called for.

The Respondent called for books, contracts and figures of the Holyoke Water Power Company, relative to quantity and cost of electricity and gas sold by the Company.

Mr. BROOKS. It is impossible for us to furnish those books without stopping the business of the Holyoke Water Power Company, and if you desire to make an examination of them we should be very glad if the Commission would be kind enough to go to the office of the Holyoke Water Power Company while the examination is being made. There are large rooms there and ample opportunities.

Mr. MATTHEWS. We do not understand that there is any disposition on the part of the Company to withhold the books, and we appreciate the difficulty of bringing them here. It has been suggested that perhaps the purposes of this case will be served if the returns made by the Company annually under the law to the gas commissioners are used, and I don't know but that is so.

Mr. BROOKS. Oh, no, we don't agree to that.

Mr. MATTHEWS. An agreement was entered into that we should be furnished with copies of those returns.

Mr. BROOKS. But we do not agree that the returns to the gas commissioners shall be evidence of what our profits were or of the amount sold.

Mr. MATTHEWS. Do you object to these returns as being copies?

Mr. BROOKS. No.

Mr. MATTHEWS. The law requires all gas and electric light companies to make annual returns of their financial and manufacturing operations upon blanks sent out by the Commissioners. The fiscal or manufacturing year, so to speak, begins on the first day of July and ends the 30th of June in each year, and every gas and electric light company in the State, in compliance with that law, files these returns each year some time during the summer. The Holyoke Water Power Company has done so for a long series of years, with respect to both the gas and the electric light plants, and those returns are sworn to by the officers of the Company. I may as well state at this point in the hearing that we purpose offering at the proper time those sworn returns as evidence against the Holyoke Water Power Company upon the valuation of their gas and electric light plant. At present, however, we desire to use those returns simply for the purpose of showing the manufacturing expenses of the Company with reference to the gas plant in charge of which this witness has been for many years. Is there any objection to our using them for that purpose?

Mr. BROOKS. Yes, sir; we object, and desire to say further

that I extended to Mr. Matthews the courtesy and opportunity of sending accountants to the office of the Water Power Company to make examination of our books, and I understand that they were sent.

Mr. MATTHEWS. They were sent, but couldn't make anything out of the books, because the operations of the two plants, the water gas and the coal gas, were inextricably confused.

Mr. BROOKS. They were not inextricably confused, because we have extricated them. We offered to show them whatever they desired to be shown, and I guess my friend will agree that there has been no effort on our part to conceal anything.

Mr. MATTHEWS. Not the slightest, Mr. Brooks, but we cannot cross-examine this witness without the facts showing the cost of operating this gas plant. That is a very material part of the case.

Mr. BROOKS. We will put on testimony with reference to the actual cost; and in that connection, if desired, we shall introduce our books.

Mr. MATTHEWS. But we desire them for the purpose of cross-examining this witness.

Mr. BROOKS. We will fix it so you will have every opportunity to cross-examine him on everything that is proper.

Mr. MATTHEWS. Can you have those books here tomorrow?

Mr. BROOKS. You can have them, because we can charter a car and bring them down, but that means the closing up of our business. We thought at the proper time the Commission might indulge us by going to Holyoke, and holding a session at the building of the Holyoke Water Power Company.

Mr. MATTHEWS. Do you make that in the line of an objection?

Mr. BROOKS. I do.

Mr. MATTHEWS. If agreeable to the Commission, we think the sooner that matter is got out of the way the better.

Mr. BROOKS. Of course, we should prefer to go on with our plans and testimony.

Mr. MATTHEWS. We have a large number of questions we should like to ask this witness.

THE CHAIRMAN. You can postpone your cross-examination, and you had better go on, Mr. Brooks, with your testimony. I have got to go to Plattsburg to-morrow night, and I suppose the Commission will not sit on Saturday. I have an extraordinary reason for going, and if I can get away from Holyoke to-morrow as well as from here, it may be well to go to Holyoke.

Mr. BROOKS. What time do you desire to go?

THE CHAIRMAN. I haven't looked up the route. I think I have got to go first to Albany.

Cross-examination.

By Mr. MATTHEWS.

Q. I understood you to say that there were four generators in the water gas plant—the way I took it down. You meant one generator? A. There is only one generator. There are four wrought-iron cylinders, I think I stated.

Q. What is the maximum output of your gas plant? A. Per what? day or year?

Q. Per day. A. The most that we ever sent out was 420,000 feet a day.

Q. Do you remember what year that was in? A. I think it was three winters ago.

Q. 420,000 cubic feet? A. Yes, sir.

Q. Per day? A. Yes, sir.

Q. That was three years ago? A. I think so.

Q. And what has been the largest daily output since? A. I don't remember whether that 355,000 I spoke of last winter was the largest or not, but I think it is.

Q. I didn't catch the reference in your answer. 355,000? A. Yes, sir.

Q. You mentioned that in your direct examination? A. Yes, sir, as being sent out one day last winter.

Q. And before three years ago when you reached 420,000, what had been your greatest daily output? *A.* I can't tell you, sir. I can't remember to go back, to tell those figures.

Q. Had it ever reached that point? *A.* No, sir.

Q. And I understood you to say on direct examination that the capacity of your coal gas plant was between 500,000 and 600,000? *A.* Well, I couldn't say "between." I say that I gave the first, 500,000, and then said it would easily make 600,000.

Q. An excess of about 50 per cent. over the largest amount of gas that you have ever been called on to turn out daily? *A.* Yes, sir.

Q. Have there been any additions to your coal gas plant since the water gas plant was put in? *A.* No, sir.

Q. And for how long a term of years has the coal gas plant been of substantially its present size? *A.* I shall have to refer to my dates to tell you that. Since 1880, at the time this present retort house was built. To modify that somewhat, the stacks of benches are not the original stack. The original stack is a double stack built back to back. We rebuilt that in 1892. That increased the capacity of each bench somewhat.

By Mr. GREEN.

Q. Was that change, you say, made in 1892? *A.* Yes, sir.

By Mr. BROOKS.

Q. This is the coal gas plant, I understand? *A.* Yes, sir.

By Mr. MATTHEWS.

Q. The water gas plant was put in in 1896? *A.* Yes, sir.

Q. And you use it now in connection with the coal gas plant? *A.* Yes, sir.

Q. You make no more gas now than you made before with the coal gas plant alone? *A.* Practically not; no, sir.

Q. You make rather less, don't you? *A.* No. Our last year's send-out was larger than ever before.

Q. What is that? *A.* Our last year's send-out was greater than any year before.

Q. By "send-out" you mean your sales reckoned in cubic feet, I suppose? *A.* Yes, sir.

Q. Do you know what the total sales of gas last year were, measured in cubic feet? *A.* 60,000,000, as I recall it.

Q. For what year was that, Mr. Snow? *A.* For the year that came in the last gas commissioners' report.

Q. The year ending June 30, 1898? *A.* Yes, sir.

By Mr. GOULDING.

Q. Sixty millions? *A.* Sixty millions, yes sir.

By Mr. MATTHEWS.

Q. Sixty millions for the year ending June 30, 1898. *A.* I think that was the date. I will say this, I don't know that I can swear that that was that year. There have been so many figures, all of the different years. To the best of my recollection that is what it is.

Q. Do you remember what it was the year before? *A.* No, sir, I can't give it.

Q. Or the year before that? *A.* No.

Mr. BROOKS. We can show you all this from our books.

THE WITNESS. I can't carry those figures in my head. It is an impossibility for a man to carry figures like that in his head.

Q. Who makes up the returns to the gas commission for your company? *A.* There are two or three that are connected in it. Our clerk, that is at work for me; another that is working in the office.

Q. What is the name of the clerk who works for you? *A.* Adams.

Q. And his full name? *A.* Oliver.

Q. And some one else assists him? *A.* Yes, sir. Well, he assists the other one.

Q. Yes. And do these gentlemen prepare these returns under your supervision? *A.* I supervise only the gas part of it. I have nothing to do with the rest. The financial part I have nothing to do with. It is merely the figures for

the manufacturing part of it, the manufacturing and distribution.

Q. What do you mean by those figures as distinguished from the financial figures? *A.* It is merely the number of feet sold, the number of feet distributed. As far as the finances, the money, collecting or paying out any money, I have nothing to do with that.

Q. You have nothing to do with the disbursements? *A.* No, sir.

Q. The money paid for coal? *A.* No, sir.

Q. Or naphtha or oil? *A.* No, sir.

Q. You have nothing to do with the expenses of the company? *A.* No, sir, I have no connection with the financial part.

Q. Either the purchase or the sale account? *A.* Well, in a way you can say I have connection with the purchase, in that I do buy things.

Q. Who makes up the returns to the gas commission that show the expenses and receipts of the Company in its gas plant? *A.* Mr. Stapleton, I think, is the man that has that in charge, although I can't say who is.

Q. Who? *A.* Stapleton, one of the clerks in the office.

Q. What is his full name? *A.* John F.

Q. John F. Stapleton. And he superintends all the entries relating to dollars and cents on either side? *A.* Yes, sir.

Q. Now do you know what sources of information these gentlemen use in making up their returns to the gas commission? *A.* The books of the Company, records that we keep.

Q. Do you keep any of those books yourselves? *A.* No, sir.

Q. Are any of them kept under your direction? *A.* The gas works register; that is, the make of gas.

Q. I didn't hear that. *A.* The gas works register; the make of gas; the amount of coal used; the record of the gas works; just the daily record of the running of the works.

Q. That is, all the records and returns relating to the consumption of coal and other commodities, and the manufacture of gas, are kept by you or under your supervision?

A. Yes, sir.

Q. And the returns to the gas commission relating to those items are made up under you? *A.* Yes, sir.

Q. You don't remember the total sales of your Company prior to the last year? *A.* No, sir, I couldn't tell you.

Q. Well, they were less than they were last year, weren't they? *A.* Yes, sir.

Q. They had never been as much as 60,000,000 cubic feet before, had they? *A.* No, sir.

Q. Was there not a falling off in the consumption of gas in the city for a series of years? *A.* With one exception, possibly. I can't answer that definitely. It is my impression that there has been no year that we have shown a decrease, but I can't recall.

Mr. GOULDING. You say there has been no year with the exception of one?

Mr. BROOKS. No.

THE WITNESS. I don't recollect any year that has been shown.

Q. Wasn't there a fall in the consumption of gas in the city of Holyoke between 1892 and 1894? *A.* I don't recollect. I can't tell you, sir.

Q. These figures are made up under your supervision, aren't they? *A.* Yes, sir.

Q. And you have special charge of that portion of the Company's operations which relates to the quantity of gas manufactured and distributed? *A.* Yes, sir.

Q. And you don't remember whether or not there has been a decrease in the consumption of gas? *A.* I don't recollect any year that we ran backwards.

Q. Isn't it a fact that there was a decrease for a series of years? *A.* I don't think so.

Q. You don't think so? *A.* I do not. It is the best of my recollection that it is not so.

Q. But the returns that your Company has made the gas commission would show, wouldn't they? *A.* I can't tell you.

Mr. BROOKS. Well, he doesn't make the returns.

Q. Didn't you state a moment ago that that portion of the returns was prepared under your supervision? *A.* I can't tell what the returns stated, if that was your question.

Q. Do your books — the books kept by the Company — show the annual sales of gas? *A.* Yes, sir.

Q. Covering the same period of time that is embraced in the returns to the Commission? *A.* Yes.

Q. Are the returns to the Commission copied from those books? *A.* Yes, sir.

Q. That is, the returns to the Commission are substantially a transcript of the Company's books? *A.* Supposed to be, yes, sir.

Q. And that portion of the books and the returns which relates to the consumption of gas is prepared under your supervision? *A.* Supposed to be.

By Mr. GOULDING.

Q. What is that? *A.* I say in answer to his question — I said I supposed so — they are supposed to be.

Mr. GOULDING. What you supposed is not evidence here. If you are answering what you know, that is all right. If you are answering what you are guessing or speculating about, we prefer that you confine your answers to your knowledge.

THE WITNESS. I have not taken the gas commissioners' returns and compared them from year to year with our figures, to see that they are absolutely correct.

By Mr. MATTHEWS.

Q. I thought you said that the returns to the gas commissioners for the amount of materials purchased and the output sold were prepared under your supervision? *A.* Yes, sir.

Q. Well, they were correct, then, weren't they? *A.* The returns to the Commission were correct, yes, sir.

Q. Have you ever taken the pains to see whether the re-

turns to the Commission were correctly tabulated in the annual reports of the gas commission? I refer to the printed reports made by the Commission that we have here.

A. No, sir, I never made that comparison.

Q. But so far as the returns themselves go, you are satisfied that they were correct? *A.* Yes, sir.

Mr. BROOKS. That is with reference to the consumption of gas?

Mr. MATTHEWS. With reference to the matters under his particular supervision, relating to the consumption of gas and the other manufacturing statistics.

Q. I do not think that you stated to the Court the exact manner in which you used this water gas plant in connection with your coal gas plant. Would you kindly elaborate that a little? *A.* In what way do you desire?

Q. Well, do you use the coke that is turned out in the coal gas plant over again in the water gas plant, in any manner, and if so, how? *A.* Well, we use the coke in the generator.

Q. Will you explain to the Commission a little more fully just what you do with that coke? *A.* Coke is brought from the retort house and dumped on the floor in this vacant space in the water gas plant building, and quenched with water. What part we desire to use in the generator is shovelled off the floor into a barrow, the barrow run onto that hydraulic elevator, and the elevator carries the barrow with its coke to the operating floor, the same as I described as I was going over it in the first place.

Q. That coke is the residuum of your coal gas process? *A.* Yes, sir.

Q. It is not coke that you buy on purpose; it is the product of the coal gas plant? *A.* It comes from the retort house; yes, sir.

Q. What percentage of the coke that is produced by the retorts is consumed in your water gas generator? *A.* I never figured to see.

Q. Well, can't you state roughly? *A.* It would be very roughly.

Q. Well, state that.

Mr. BROOKS. Do you want a piece of paper? (Giving paper to witness, who proceeded to make computations.)

A. Roughly, I should say 13 per cent. of our total make of coke.

Q. 13 per cent. is used in the water gas plant? *A.* Yes, sir.

Q. And you sell the rest? *A.* No, sir.

Q. What do you do with the rest? *A.* Use $33\frac{1}{3}$ per cent. of it in the fires under the retorts.

Q. I meant the surplus; what do you do with the rest of the surplus? *A.* Sell the rest of the surplus.

Mr. GOULDING. That is, the coke?

Mr. MATTHEWS. That is, coke.

Mr. GOULDING. 33 per cent. used under the retorts, and the rest sold?

Mr. MATTHEWS. 13 per cent. of the surplus is used in the water gas plant.

THE WITNESS. 13 per cent. is figured on the total make of coke.

Q. I failed to make my question clear. I meant to ask you what was done with the surplus coke that was the result of the coal gas process? *A.* I understood you to say what part of the total made. I figured on that.

Q. This 13 per cent. of the whole would be a somewhat larger percentage of the surplus? *A.* Yes, sir.

By *Mr. GOULDING.*

Q. Will you kindly state that answer again, so that we can understand it over here? What is the 13 per cent. used for, and the 33 per cent.? *A.* The 13 per cent. of coke that we use in the water gas generator was figured on our total make of coke. That is, we use a certain amount of coal that will approximately make a certain amount of coke. We use about a third of an amount of coke that is made in the retorts in the fires that heat the retorts. This 13 per cent. is not 13 per cent. of the surplus coke that we take from the retort house, but is figured on the total make of coke.

Mr. BROOKS. That means 46 per cent.

By Mr. MATTHEWS,

Q. That is, substantially half your coke is used in your plant, and the rest is sold? A. Yes, sir, that would be approximately it.

Q. Are you required to buy or use any other coal or coke for your water gas plant, except that which you get from your coke from the coal gas plant? A. That is all we have ever used since we have had the plant.

THE CHAIRMAN. It is one o'clock. I think we had better stop.

(Noon recess.)

AFTERNOON SESSION.

WILLIAM H. SNOW, *Cross-examination resumed.*

By Mr. MATTHEWS.

Q. When did you enter the employ of the Holyoke Water Power Company? A. 1875.

Q. In what capacity? A. Assistant superintendent.

Q. Of the gas works? A. Yes, sir.

Q. Who was over you as superintendent? A. Mr. Rhodes.

Q. How long was he superintendent? A. I can't tell you. Several years before I came.

Q. How long did he remain? A. Till 1890.

Q. You have been superintendent since 1890? A. Yes, sir.

Q. Nine years? A. Yes, sir.

Q. Assistant superintendent fifteen years? A. Yes, sir.

Q. Can you state what books and records are kept at the gas works, or in connection with the manufacture and sale of gas? A. A daily record book of the amount of gas consumed.

Q. Anything else? A. We keep the record of street mains, services; we have a charge book that we charge anything in that may be sold.

Q. Service book means the record of the services introduced? *A.* Yes, sir; that goes on the charge book.

Q. Do you keep any other records that you remember? *A.* I think that comprises it all.

Q. Who keeps the pay-roll and the time-book? *A.* Oh, we keep a time-book, too.

Q. You have that, too? *A.* We keep a time-book.

Q. You keep a daily record of the output? *A.* Yes, sir.

Q. Of the consumption of materials, too? *A.* Yes, sir.

Q. You make up those returns weekly or monthly? *A.* We make up our monthly report on the book, making out the total for the month.

Q. That is, this daily record book contains also the monthly total? *A.* Yes, sir.

Q. Do you keep the annual totals in any book? *A.* In that same book.

Q. Then one book serves for daily record, monthly record, and yearly record? *A.* Yes, sir.

Q. Does one book contain the operations of more than one year? *A.* Yes, sir.

Q. How many years are included in one book? *A.* I can't tell you. I don't remember how many years are included in any particular book. We have six to eight books.

Q. What do you call that book? *A.* I don't know that we have any given name for it. It is a record book, daily record book.

Q. Does the book now in use cover seven or eight years? *A.* The book we have now contains three or four.

Q. And the book before that will cover six or eight years? *A.* Yes, sir.

Q. Do you have any book showing the lengths of the street mains? *A.* Yes, sir.

Q. Is that kept at the house? *A.* Yes, sir.

Q. In your office? *A.* Yes, sir.

Q. You haven't mentioned that yet? *A.* Yes, I mentioned that.

Q. You mentioned service pipes, I thought. *A.* Mains and services.

Q. Well, the service book you stated was kept for the purpose of making charges. Do you mean charges against individual consumers? *A.* Yes, sir.

Q. But the main-book is different? *A.* Yes, sir.

Q. What does that show? *A.* Simply the locations of the mains in the street, sizes, gates, drips.

Q. You enter in that book whenever you lay a main? *A.* Yes, sir.

Q. The book will show the dates at which the several mains of the Company were laid? *A.* Some of them. The record of dates does not go back far.

Q. How far back have you the records of the dates when the gas mains were laid? *A.* Roughly, I should say twelve years. I should not like to be pinned down to that date.

Q. Those records would be all in this main-book? *A.* Yes, sir.

Q. Is that one volume, or more? *A.* We have all the records in one volume, but part of them have been copied from another book.

Q. Do you give any name to that book? *A.* That is the record of street mains.

Q. Do you keep any book, or other record, of the sales as distinct from that book? *A.* No; that goes on the daily record. The sales we don't keep a record of, outside of our meter books; that is, the books with the names of consumers, books of meter readers and the ~~books~~ they take with them as they are reading meters. Then there is one larger book where those names are copied. That I believe is never carried out to any totals.

Q. Where are the meter books kept? *A.* They are at the gas house.

Q. Are all these books kept under your supervision? *A.* Yes, sir.

Q. What are the books, or records, from which you make up the total annual sales of gas? Is there any book of it? *A.* Those are in the Company's office. I have nothing to do with those.

Q. I understood you to say that you made up the annual

total of sales, not in dollars and cents, but in feet. *A.* I didn't mean to say that. That book is kept in the office.

Q. Is that book dependent on the books kept in your office? *A.* It depends on the meter reader's books.

Q. How is that book in the general office named or designated? *A.* Gas Register.

Q. That covered a series of years? *A.* We have books covering — how many of them go into one year, I know nothing about.

Q. Do you keep any records showing the cost of manufacturing gas? *A.* No, sir.

Q. Do you ever make up such records yourself? *A.* I have done so.

Q. Do you make it a regular practice? *A.* No, sir.

Q. Have you any means of ascertaining from time to time what your gas is costing you? *A.* From this daily record.

Q. Will that show the price paid for materials and the price received for gas? *A.* No, sir.

Q. Then, how can you make out the cost of gas in the holder from that book? *A.* We know the amount of materials we have, and get the prices somewhere else.

Q. Is the cost in the holder carried out in that book? *A.* No, sir.

Q. Then you can only use the entries in that book for part of your work? *A.* Yes.

Q. And part of your data you have to get somewhere else? *A.* Yes, sir.

Q. Don't you keep any record of the cost of manufacturing gas at your works? *A.* No, sir.

Q. Have you ever done so? *A.* No, sir.

Q. Do you know, or can you ascertain what the cost at various periods has been? *A.* It is a matter of picking it out from the books, I should say.

Q. When was the water gas plant started up? *A.* In August, along about the middle of August, 1896.

Q. That is to say, about the beginning of the gas year of 1896-1897? *A.* Yes, sir.

Q. Or shortly after? *A.* Yes, sir.

Q. How long were those works in construction prior to their being started up? *A.* We started digging, I think, in March of that year, for the building.

Q. Have you any means of comparing the cost of your gas in the holder before the water gas plant was started up and afterwards? *A.* Going back and picking the items out. There is no other record of it.

Q. Have you been able to make gas cheaper since the water gas was put in than you were before? *A.* Yes, sir.

Q. Do you know how much cheaper? *A.* I will modify that statement. I don't know.

Q. Didn't you ever know? *A.* Only in a general way. I haven't figured it right down to know, as you, I think, are trying to bring out. I can't answer the question.

Q. But you do know in a general way the cost of gas is less now? *A.* Yes, sir.

Q. How much you would not be able to state? *A.* No, sir. This is more in the line of taking labor and materials and comparing them. It is not going into the matter of repairs and going into it thoroughly. Simply comparing labor and materials.

Q. And that you have not done? *A.* That is all I ever have done. I have not made the complete analysis.

Q. Have you made any analysis showing the relative cost to the Company of making the gas before the water gas plant was put in, in August? *A.* Only in that way, taking the labor and material.

Q. Do you put the results of that analysis in some book or record? *A.* No, sir.

Q. Have you preserved the results in writing? *A.* No, sir.

Q. And you are not able to state what they were? *A.* No, sir.

Q. Except in a general way that the gas cost you less than it did? *A.* Yes, sir.

Q. That was the object in putting in the water gas plant? *A.* One of them. The main object of putting in the water gas plant was for ease in running.

Q. And also to reduce the cost of manufacturing? *A.* That

didn't enter into it so much as having a capacity as we need it, to help out the coal gas.

Q. You had a sufficient capacity before? *A.* A sufficient capacity in a way, but it wasn't an elastic capacity to take care of the variations in our send-out.

Q. Your actual capacity was 50 per cent. beyond any demands? *A.* Yes, sir.

Q. But the water gas plant enabled you to handle your works more economically and more easily? *A.* More easily, particularly.

Q. In what proportions do you mix your gas now? *A.* They vary. There is no stated proportion.

Q. State the limits of variation on the average. Get at it as nearly as you can. *A.* We have perhaps varied all the way from a 10 per cent. mixture to entire water gas or entire coal gas. There is no definite mixture since the plant has been running..

Q. What considerations determine you from day to day in apportioning? *A.* The fluctuations in the send-out, the demands.

Q. What is the candle-power of the gas you are furnishing since the water gas was introduced? *A.* It will average close on to twenty.

Q. What was it before? *A.* About 18.

Q. If you were sending out pure water gas, you would get more than twenty? *A.* We could.

Q. What are the fluctuations in the candle-power of the gas that you send out, now that you are mixing the two? *A.* I can't give you that definitely, as it goes through the year.

Q. Well, if you sometimes send out a gas which only has 10 per cent. of water gas in it, and sometimes gas which is all water gas, there must be considerable fluctuation in the candle-power, mustn't there? *A.* I said it has varied. It doesn't vary now. Soon after we were running the water gas plant we had occasion to shut down the coal gas plant for a few days; I don't remember how many days. Then we were sending out all water gas. Since then we probably have not sent out over one-third water gas and two-thirds coal. In answer about the

fluctuation, we are making our coal gas practically as if there was no water gas to be mixed with it, to obviate the trouble of a varying candle-power. That is, instead of depending upon the water gas to enrich our coal gas, we are enriching our coal gas as we would if we were sending that out alone.

Q. So as to keep an average candle-power of about 20? *A.* As nearly uniform as we can. It probably will vary two candles.

Q. And you vary in the number of benches that you run within what limits? *A.* Well, last summer the lowest number we ran was two. This past winter the most we ran was five.

Q. Are you able to state from any records the average amount of gas that was manufactured in the water gas plant during any given year? *A.* The records will show that. I can't tell you from memory.

Q. These record books that you have been speaking of show the amount of coal gas made and the amount of water gas made, both, do they? *A.* Yes, sir; it is all in the same book.

Q. That is, it is separated in the two plants, and then the total is given also? *A.* Yes, sir.

Q. On your statement that the sales last year amounted to 60,000,000 cubic feet, that would be an average daily sale of 164,000 cubic feet, would it not, or somewhere round there? *A.* I haven't figured it. I will take your figures, if you say so.

Q. And you say the capacity of this plant is 700,000 cubic feet daily from the water gas plant? *A.* Yes, sir.

Q. And 600,000 from the coal gas? *A.* Yes, sir.

Q. A total generating capacity of 1,300,000 cubic feet per day? *A.* Yes, sir.

Q. The average draft upon the Company during the last year was about 165,000 feet, and the maximum was about 355,000? *A.* This last winter it was.

Q. Well, it would be more in the winter than in the summer, of course? *A.* Yes, I don't know whether you were connecting last year with the last gas commissioners' report. That is why I say this last winter was 355,000.

Q. Then when you said the highest consumption per diem during the last year was 355,000 cubic feet, you meant the winter of 1898-99? *A.* Yes, sir.

Q. And not the winter of the last gas commissioners' year?

A. No, sir; I don't remember what that was.

Q. How many purifying boxes have you in the purifying house? *A.* Four.

Q. And what is the total capacity of that plant? *A.* It was bought to take care of 500,000.

Q. What? *A.* 500,000, twenty-four hours.

Q. That is running all four? *A.* That is running three of them at a time.

Q. Using the other one for cleaning? *A.* Yes, sir.

Q. I wish you would state to the Commission how the purifying boxes are operated, a little more fully than you have. *A.* Well, if you will ask the question I will undertake to answer it.

Q. State what you do with the lime or other material that you use for purifying the gas, and why it is that three out of the four purifying boxes must be in use? *A.* I don't know that I can swear to why they should use three at a time. It is generally accepted in the business that you can purify the gas more easily in just such a combination, than if you send your gas through only one pan with clean lime in it, that you couldn't purify so much gas per bushel of lime as if you had two,—one pan a little dirtier than the clean pan; and you cannot purify as much per bushel of lime, having two pans, as if you had three.

Q. The result of it is that you couldn't purify more than 500,000 cubic feet of gas in your purifying plant, as it now consists of four boxes? *A.* I can't say that I cannot; I never have.

Q. I understood you to say that was the capacity? *A.* That was the rated capacity when they were bought.

Q. When were those purifying boxes that you now have procured by the company? *A.* 1882.

Q. And what is the size of them? *A.* 15 x 20, three feet deep.

Q. 15 x 20 x 3. From whom were they bought? *A.* Morris & Tasker, I think; the Pascal Iron Company.

Q. How do you get the lime into the purifying house? *A.* Wheeling it in in wheelbarrows from the lime room.

Q. The lime room is shown on one of those plans, isn't it?
A. Yes, sir.

Q. That is done by hand, wheeling in? *A.* Yes, sir.

Q. How does it get into the lime room? From where do you carry it to the lime room? *A.* It is brought to the lime room in a team.

Q. In teams? *A.* Yes, sir.

Q. Is it brought to the works on the railroad? *A.* It can be. At present it is not being. We have had it both ways, either by the railroad or brought from dealers in town.

Q. And it is some distance from the railroad to the lime room, isn't it? Perhaps you can state the distance? *A.* I can't actually. I guess I could scale it. I should think perhaps 60 feet from the railroad.

Q. Can you point out on this plan where the entrance to the lime room is? *A.* There is an entrance right in this north-east corner.

Q. Towards the railroad? *A.* Towards the railroad. Also another one on the west side of the room.

Q. And if you brought your lime to the works by rail, you would have to handle it by hand from the railroad, or by cart from the railroad, to the lime room? *A.* Yes, sir.

Q. A distance of how many feet? *A.* That scales about 55 feet.

Q. And where you bring it in by team, how do you get there? Between the two gasometers? *A.* They can come this way, or between the No. 1 gasometer and the lime room, round in that way.

Q. What is the capacity of those two holders respectively, No. 1 and No. 2? *A.* No. 1 has a rated capacity of 56,000, No. 2 of 119,000.

Q. What? *A.* Thousand cubic feet.

Q. That is, the total holder capacity at the plant is 175,000 cubic feet, isn't it? *A.* Yes, sir.

Q. What is the capacity of the other holder on Bridge Street? *A.* 150,000.

Q. The total capacity of the three is 325,000, if I have it right? *A.* Yes, sir. That is the actual capacity. That is not the practical working capacity. That isn't quite so much.

Q. What would you say was the practical working capacity of those three holders? *A.* I should take off about 25,000 from the three.

Q. Leaving a net of 300,000 as the practical working capacity of the three holders? *A.* Yes, sir.

Q. Then the fact about the capacity of your gas plant is this, is it not, that you have a generating capacity, including both your benches and your water gas plant, of about 1,300,000 cubic feet daily; you have a purifying capacity of about 500,000; and you have a holder capacity of about 300,000 cubic feet? That is a fair statement, isn't it? *A.* Yes, sir.

Q. If, then, the consumption of gas in the city of Holyoke should increase up to 500,000 daily, or beyond that amount, you would have to enlarge the capacity of your purifying plant, wouldn't you? *A.* Yes, sir.

Q. Now is there any room in the present purifying house for the introduction of more boxes? *A.* No, sir; short of putting it on top of these.

Q. You would have to raise the building to do that, wouldn't you? *A.* Yes, sir.

Q. Is there any vacant land belonging to the Company at its gas works upon which you could build another purifying building or enlarge the present one? *A.* There is room to put up another building.

Q. Where would you find that room? *A.* It is west of the two gas holders.

Q. West of the two gas holders? *A.* You might say, rather, west of the No. 1 gas holder. There is room between that and the fence to put a building in.

Q. You refer to the westerly corner of the premises? *A.* There is room, I think, right due west from the building, from the No. 1 gas holder. There is also room to the north-west, in a northerly direction.

By the CHAIRMAN.

Q. Does that cover the land that is offered? *A.* Yes, sir: it is inside our fence line.

By Mr. MATTHEWS.

Q. If you build an additional building for purifying purposes

west or north-west of the gas holders, you would have the holders between the two portions of the purifying plant, wouldn't you? *A.* Yes, sir.

Q. Would that be a convenient or profitable or economical arrangement? *A.* It would so far as the water gas is concerned.

Q. You would not want to operate the plant that way if you could help it, would you? *A.* I don't know but I would just as soon mix the two gases at the holders as back where they are, or at the station meter.

Q. This corner of vacant land west and north-west of holder No. 1 is practically the only part of the gas works lot offered to the City which is available for additional buildings of any sort, is it not? *A.* We could get some more building down at the lower end of it, there is a little vacant space there.

Q. A little vacant space at the end of the lot. You could not get a very large building there, could you? *A.* We could not get a city hall on there.

Q. There is not room on that lot for another holder, is there? *A.* No, sir.

Q. If the output—if the draft upon the gas works—were increased materially, beyond 420,000 or 500,000 cubic feet daily, you would have to have not only additional purifying boxes and an additional building for the purpose, but you would have to have other machinery, wouldn't you, in addition to what you now have? *A.* We probably would need some more condensers.

Q. Would you not have to enlarge or duplicate the capacity of the plant in the condensing room and where the exhausters is? *A.* The exhausters would take care of as much gas as we could make, I think.

Q. They would, but the condensing room would certainly have to be increased, wouldn't it? *A.* As I remember the capacity of the exhausters, they are more than the capacity of the two generating plants.

Q. You would have to add to your condensing plant, certainly? *A.* Yes, sir.

Q. And the condensing room? *A.* Yes, sir.

Q. And there is no way to add to that in the present building, is there? *A.* Yes, sir.

Q. How would you do it? *A.* You can take that men's washroom, put apparatus in there.

Q. That is the room that is between the purifying room and the condensing room? *A.* Yes, sir.

Q. What is the present capacity of the condensing apparatus in what is called the condensing room? *A.* Each of the pieces of apparatus in there has a rated capacity of 500,000. Perhaps — I won't say each — everything that has been bought there since the retort house was built, in 1880, I think, has been bought with a rated capacity of 500,000; all the apparatus in that building, the purifier-condenser room.

Q. That is, the capacity of that building, as a whole, is 500,000 rating, except the exhausters? *A.* They are more, yes, sir.

Q. What? *A.* Yes, sir.

Q. I understood you to say that you kept the whole purifying plant in operation,—that is, three of the boxes filled with lime and gas while the other one was being cleaned? *A.* Yes, sir.

Q. And how often are they changed? *A.* That depends altogether on how much gas we are sending through.

Q. What is the practice? *A.* We vary from every other day up to perhaps not oftener than once a week,—not oftener than once in two weeks.

Q. When were these gas holders built, the two that are on the works now? *A.* They were both built before I came there; they were both built before I came there.

Q. Before 1875? *A.* Yes, sir.

By Mr. BROOKS.

Q. Both what? *A.* Both those gas holders.

By Mr. MATTHEWS.

Q. When was the holder on Bridge Street built? *A.* 1884.

Q. Do you know what the reason for putting up that holder was? *A.* Larger required storage capacity.

Q. Do you know what the daily output or actual sales of gas made by the Company in 1884 were, or just prior to the

construction of the third holder? *A.* I don't remember, no, sir.

Q. That additional holder, you say, was put up for the purpose of meeting the increased demand on the works? *A.* Yes, sir, storage capacity.

Q. It was necessary, was it, at that time? *A.* Yes, sir, so considered.

Q. But do you not remember what the daily output of the company then was? *A.* I cannot tell, no, sir.

Q. Or the annual consumption? *A.* No, sir, I could not tell.

Q. Was there any other reason for building the additional holder on Bridge Street than the need for additional holder capacity? *A.* What do you mean?

Q. Well, was there any other? Any other reason than the one you have — *A.* For building the holder?

Q. For building the Bridge Street holder than the reasons which you have assigned? *A.* None that I know of.

Q. Was that built to assist the Company in regulating the pressure on its mains? *A.* No, sir.

Q. Wasn't that one of the reasons which induced the Company to erect that third holder? *A.* No, sir.

Q. Hadn't you had trouble with the pressure in your smaller mains? *A.* Yes, sir.

Q. You did have trouble? *A.* Yes, sir.

Q. Wasn't that trouble largely remedied by the construction of this third holder? *A.* It was, by its construction and by its location. It was located there to help out the small mains.

Q. That is to say, you would not say it was actually built for the purpose, but it was located where it was — *A.* It was needed to be built; and located where it would take care of the pressure to the best advantage.

Q. And you had had trouble with the smaller mains before that time? *A.* Yes, sir.

Q. The gas goes out from your works in a 15-inch pipe, doesn't it? *A.* For a short distance.

Q. Up to the edge of the canal, I believe? *A.* Yes, sir, up to the edge of the bank.

Q. And what is the size of the pipe or pipes which conduct the gas from that pipe into the Bridge Street holder? *A.* There is a 12-inch pipe runs from that point clear down to the Bridge Street holder.

Q. Is the entire city supplied by one pipe leading from your gas works? *A.* No, sir, there are two 12-inch mains.

Q. One of them goes to the Bridge Street holder? *A.* Yes, sir.

Q. Another one goes into the other part of the city? *A.* Goes up on the hill.

Q. Up on the hill? *A.* Yes, sir.

Q. When were those two mains laid? *A.* A part of the 12-inch pipe going into the south end holder I can't tell you anything about, but a part of it — I am not absolutely sure on those dates. As I remember, the pipe was run from Dwight Street, down Race Street, Cabot, and Bridge, to the holder at the time the holder was built, the pipe at that time running through the Whiting Paper Company's yard to Dwight Street. Since then that pipe has been taken up through the Lyman Mills yard, run through Race Street, connecting into the 12-inch main on Race Street at Dwight Street, making this continuous 12-inch line down.

Q. You think that the 12-inch main that runs into the Dwight Street holder was built before the holder was? *A.* That part that runs as far as Dwight Street was.

Q. And when was the other 12-inch main running on the hill built? *A.* 1896 or 1897. I forget which. 1896.

Q. What was the size of the pipe that supplied that part of the town before 1896 or 1897, when you put in this 12-inch main? *A.* There was a 6-inch main running up Dwight Street from this 12-inch main, and an 8-inch main running up Cabot Street.

Q. Have you had any trouble recently from lighter pressure or anything connected with pressure? *A.* Not since we put in that last 12-inch line.

Q. That was in 1896 or 1897? *A.* Yes, sir.

Q. Then you had had trouble connected with the pressure in your smaller mains in 1894 and 1895, along there? *A.* Yes, sir.

Q. And also prior to the building of the Bridge Street holder in 1884? *A.* Yes, sir; but those were in two different localities.

Q. Exactly. You had had trouble on one side of the city prior to 1884 and on the other side of the city prior to 1896?

A. Yes, sir.

Q. Now what was that trouble due to? *A.* A larger draft on the pipe than they were able to stand; so much draft that the friction would not let the gas through.

Q. Due to the small size of the mains, in other words? *A.* Yes, sir.

Q. You have got a very large proportion of 3 and 4 inch mains, haven't you? *A.* I cannot say that. I do not know what would be considered a large proportion.

Q. That is all shown in the schedule which you prepared? *A.* Yes, sir.

Q. Now that schedule of street mains was prepared by you in what manner and from what data? *A.* Well, it was not prepared by me personally. That was made up in the engineering department.

Q. Under your supervision? *A.* With my assistance.

Q. With your assistance? *A.* Yes, sir.

Q. And from what data was that schedule of street mains prepared? *A.* From the maps we already had and from my knowledge, if there was anything left off from the map.

Q. Wasn't it prepared by the aid of the street main book? *A.* That helped, I think. I won't say. I don't remember.

Q. And also with the assistance of separate plans prepared from time to time for extensions? *A.* I included them in the maps that I mentioned.

Q. Oh, maps, you said,—maps? *A.* Yes.

Q. I misunderstood you. Have you had any trouble with your street mains with respect to pressure since the 12-inch main was put in in 1896? *A.* No, sir.

Q. How soon, in your opinion, will it be necessary to lay additional 12-inch or larger mains? *A.* That is a rather difficult question to answer.

Q. I do not want to press you, if you do not feel competent

to answer it. *A.* There is no telling where calls for the gas will come from.

By the CHAIRMAN.

Q. What is your answer? *A.* No telling from what quarter the call for gas will come.

By Mr. MATTHEWS.

Q. If there were to be a sudden or a large increase in the consumption of gas in Holyoke, you would have to put in additional 12-inch mains or larger mains, would you not? *A.* No larger from the gas works, I think. The only extensions would be from that main on the hill, to help out some territory that was overloaded.

Q. Have you replaced any of the old 3 and 4 inch pipes in recent years? *A.* We have not replaced any that I recall. We laid a line of 6-inch main to help out that on Pine Street, between Cabot and Dwight Streets.

Q. When was that line laid? *A.* It was laid that same season that we ran the 12-inch main.

Q. You mean 1896 or 1897? *A.* Yes, sir. That was with the idea of connecting those two main supply lines up the hill to see if they would not aid each other enough to help out the low pressure, and it was largely finding that they did not help it the reason that we put the 12-inch main in.

Q. Do I understand that you have still got in use all the old 3 and 4 inch pipes that were originally laid in the city of Holyoke? *A.* I won't say that, because there have been pieces taken out.

Q. To what extent have those pipes been replaced with larger ones? *A.* At present I cannot recall any instance where we have taken it up.

Q. That is to say, the Company is still operating, distributing gas through these 3 and 4 inch pipes?

Mr. GOULDING. Well, I don't know whether he says that or not.

Mr. MATTHEWS. That is what I understood him to say.

Mr. GOULDING. He has not said that: he said he did not recall any.

Mr. MATTHEWS. I mean as far as he recalls, of course.

THE CHAIRMAN. Yes.

Mr. MATTHEWS. Subject to that qualification ; so far as you know, Mr. Snow.

Mr. GOULDING. Is not that merely argument ?

Mr. MATTHEWS. I think the witness, being manager of the gas works, can be asked to describe the system as far as he knows.

Mr. GOULDING. I only object to his interjecting an argument in every question.

THE CHAIRMAN. The stenographer may put the question.

(The question was read, as follows : "That is to say, the Company is still operating, distributing gas through these 3 and 4 inch pipes, so far as you know, Mr. Snow ?")

A. Yes, sir.

Q. And it is in order to help itself out in that particular that it has laid these 12-inch and 6-inch pipes that you have mentioned ? A. Yes, sir.

Q. Now has it laid any other pipes recently for the same purpose ? A. No, sir.

Q. You stated this morning—to go back for a moment—that the water gas plant was put in with duplication in view. I understand that by that you meant that there was space for duplicating the plant that was put in ? A. Duplication in view in case we needed to.

Q. Yes, but you did not wish to be understood as stating that the plant itself was put in in duplicate in any of its parts ? A. No, sir.

Q. There is room in the building for doing it—doubling the plant ? A. Doubling the plant.

Q. That is the water gas building, the building where the water gas plant is ? A. Yes, sir.

Q. Is there any room in the adjoining building where the benches are for increasing their number ? A. No, sir.

Q. That is, ten benches is the maximum capacity of that building ? A. Yes, sir.

Q. What date did you assign for the reconstruction of the benches in the coal gas department ? A. 1892.

Q. That is, the benches have been as they are at present dating from 1892 ? A. Yes, sir.

Q. The water gas plant was put in in 1896? *A.* Yes, sir.

Q. When were those two buildings built, respectively, if you know? *A.* The retort house was built in 1880.

Q. That is the coal gas building? *A.* Yes, sir. The water gas building was built in 1896.

Q. When was the building in which are the purifying appliances and condensing apparatus built? *A.* I don't know.

Q. Before you came there? *A.* Yes, sir.

Q. Before 1875? *A.* Yes, sir.

Q. The whole of that building? *A.* Yes, sir.

Q. When was the coal shed built? *A.* 1880.

Q. When were the buildings which comprise the pipe shop, meter room, and lime room built? *A.* I don't know.

Q. Before you were connected with the works? In 1875? *A.* Yes, sir.

Q. When was the building in which the water gas meter is built? *A.* 1896.

Q. When was the office built? *A.* 1884.

Q. You gave the date of the holders? *A.* Only the No. 3. The other two were built before I came.

Q. The other two were built prior to 1875? *A.* Yes, sir.

Q. When was the oil tank at the other end of the works built? *A.* 1896.

Q. With the water gas plant? *A.* Yes, sir.

Q. The engine room was put up at the same time the building was? *A.* Yes, sir.

Q. Can you state the dates at which the different machines or parts of machinery in the building occupied by the condensing and purifying plants were purchased and installed? *A.* The purifiers were installed in 1882, the multi-tubular condenser in 1885. That is all I have the record of.

Q. That is the machine that stands in the condensing room? *A.* Yes, sir, the circular one.

Q. Do you mean that that is all the machinery that has been put into this gas plant since you were connected with it in 1875? *A.* No, sir.

Q. You mean it is all you have a record of? *A.* That has all been put in since I have been there, but I have not the dates for the installation of the others.

Q. Was any machinery that is now used for this plant, the coal gas plant,—did you have the purifying process in use when you became connected with the works? *A.* No, sir.

Q. Do you know how long this Company has been in operation in Holyoke? *A.* No, sir.

Q. Do you know when these works were first established? *A.* No, sir.

Q. Do I understand you to say that everything that is there now has been put in since 1875? *A.* Every piece of machinery.

Q. And therefore there is not to-day — *A.* I will except the holders.

Q. And therefore there is not to-day a single piece of apparatus in this gas plant that was there in 1875? I want to be sure that I understand you. Is that so? *A.* Everything has been built, every piece of apparatus has been put there, since I came there in 1875.

Q. And there isn't anything now there that was there before 1875? *A.* No, sir, barring a possible piece of pipe somewhere.

Q. Take these last statements of yours relative to the tar wells and such things, that are outside of the buildings and underground? *A.* Every tar well has been built since I have been here, except that small one between the passageway and the blacksmith shop.

Q. And is that now used? *A.* Yes, sir.

Q. But all the outside tar wells shown on the plan have been put in since you have been connected with the works? *A.* Yes, sir.

Q. There are four of them, aren't there? *A.* Five, with this one.

Q. Four have been put in since your connection with the works began? *A.* Yes, sir.

Q. And one was there before? *A.* Yes, sir.

Q. Do you have anything to do with the book entries concerning it? *A.* No, sir.

Q. Has all this machinery which has been put in since

1890 been bought by you or under your direction? *A.* Yes, sir.

Q. And prior to that time under the direction of the then Superintendent? *A.* Yes, sir.

Q. Are records kept by the Company of the purchase of this machinery? *A.* I do not know, sir.

Q. Are there any book entries showing the date of purchase and price paid? *A.* I don't know, sir.

Q. Do you mean to say you don't know whether the Company keeps books showing the purchase price of the different articles of machinery bought from time to time? *A.* I don't know, not to swear to.

Q. You have a pretty strong suspicion that they do? If any such books were kept, and any dates made in them relating to such purchases, those entries were not made under your supervision, I understand? *A.* No, sir.

Q. Do you mean to say that you have never seen any books that are kept by the Company for this purpose? *A.* I don't mean to make any such statement.

Q. Then perhaps I don't understand what you mean to say. Have you seen books in which these purchases are entered? *A.* I don't know that I have. I have seen books in the office.

Q. You don't know what is in them? *A.* I don't know what is in them.

Q. How are your gas mains laid with respect to joints? *A.* Lead joints.

Q. All of them? *A.* Altogether.

Q. Have you a record of the weights as well as the sizes? *A.* No, sir, we never buy pipes by weight.

Q. That is not my question. My question was whether you have any record of what the weight of the pipe was? *A.* No, sir.

Q. Even of the pipes recently bought? *A.* No record.

Q. And you do not know what the weight, then, of the different sorts of pipe is that you have laid in the different streets of Holyoke? *A.* No, sir.

Q. No records kept by the Company show it? *A.* No, sir.

Q. Do you have any uniform specification, any system, for the weight of pipe that you order? *A.* No, sir.

Q. How do you order pipe? *A.* Order so many feet of the size pipe we require.

Q. Giving the size of the diameter of the pipe? *A.* Yes, sir.

Q. And not specifying the weight? *A.* No, sir.

Q. How does the manufacturer know what weight to supply you with? *A.* Only by knowing what he sent us has been satisfactory.

Q. And you leave it entirely to him? *A.* Yes, sir.

Q. Do you mean to say that you let the manufacturer select the weight of your pipes for you? *A.* Yes, sir.

Q. Doesn't he inform you what the weight is? *A.* No, sir.

Q. And you don't know what the weight per foot or yard of a single pipe you have got in the streets of Holyoke is? *A.* No, sir.

Q. And the Company has got no records concerning it? *A.* Not that I know of.

Q. Do you know what the percentage of leakage in your distribution system is? *A.* I think it is 12 per cent.

By the CHAIRMAN.

Q. 12 per cent. leakage? *A.* Yes, sir.

Mr. BROOKS. Last year.

By Mr. MATTHEWS.

Q. And the year before? *A.* I think it was 10.

Q. Are you sure of that? *A.* No, sir.

Q. The average for your Company for a long series of years has been about 12 per cent., hasn't it, so far as you know? *A.* I think a little under 12 per cent.; I should say 11.

Q. Can you state the average price of coal used at the gas works? *A.* I don't buy the coal.

Q. Well, do you know the average price the company pays for it? *A.* Well, what do you mean by average price? You mean what are we paying now, or what did we average for ten years?

Q. What are you paying now, to begin with? *A.* \$3.75.

Q. Is that delivered in the car at the premises? *A.* At the gas works.

Q. Does that include handling, or do you handle it? *A.* That is at the gas works, alongside.

Q. How does that compare with the prices you have been paying in recent years? Is that a long ton or a short ton?

A. That is a long ton. The same as last year.

Q. What? *A.* That is the same as last year, or the latter part of last year.

Q. What was it before that? *A.* I am not entirely sure. \$3.90, I think.

Q. Can you state the name of the concern from whom the Company purchased the machinery in the purifying house? *A.* In the purifying room itself?

Q. Well, I meant the whole building; but I think you stated that, didn't you? *A.* Yes.

Q. I meant the other machinery. *A.* Yes.

Q. The other machinery; who was the manufacturer? *A.* The circular multi-tubular condenser was bought from the Continental Iron Works. The oblong multi-tubular condenser and tar extractor were bought from Morris, Tasker & Co. That is, the shell of the tar extractor was bought from that firm; the inside of it was put in by the Continental Iron Works. The Standard scrubber was bought from another. I am not entirely sure whether it was bought direct from the manufacturers or their agents; I don't remember.

Q. When was that scrubber put in? *A.* I haven't the date. As near as I can remember, it has been in about six years.

Q. Do you get the power to run the engine for the water gas works from this half mill power? *A.* To run the engine of the water gas works?

Q. There is an engine at that end of the works, isn't there? *A.* Run the engine by steam, not water power.

Q. What do you do with the water power? *A.* That runs a water wheel.

Q. Where is that? *A.* In the basement of the exhaustor room.

Q. It runs the exhaustor? *A.* Runs the exhaustor and the Standard scrubber.

Q. Have you any records to show the amount of power that is made by that wheel? *A.* I don't know of any. There has been none that I know of made since it has been put in the place.

Q. You don't know how much of a power you are actually using? *A.* No, sir.

Q. To run that exhaustor? *A.* No, sir.

Q. Have you any idea how large an engine it would take to run that exhaustor? how many horse power? *A.* I have an idea. It wouldn't take over two horse power to run the engine, to run the exhaustor.

Q. Two? *A.* To run the exhaustor.

Q. That is, you could run that exhaustor with a two horse power engine, you think? *A.* Yes, sir; two horse power. I don't know that a two horse power engine would give the two horse power.

Q. Two horse power, I mean. And you don't use the half mill power that the Company supplies you with for any other purpose than running that exhaustor, do you, and scrubber? *A.* No, sir, not in power.

Q. Well, do you use it for any other purpose? *A.* The water they use round the works comes from that supply.

Q. How much water do you draw from that supply for use round the works? *A.* I am not able to state. We have a stream of water running through the scrubber to the water gas plant all the time that we are running there. It is quite a good-sized stream. They are using more or less water in the retort house. They use that water for the boiler; use the water for wetting the lime. There is a stream of water running into each of the gas holder tanks.

Q. Do you take that water before it reaches the wheel or after it leaves it? *A.* All we take from that pipe comes from before the wheel. There is another pipe that comes from the canal, that comes in that part.

Q. You don't measure the water that you use at that plant?

A. No, sir, not at all.

Q. And have no means of stating how much you do use?

A. No, sir.

Mr. MATTHEWS. I don't think of anything else until we get the books.

Re-direct.

By Mr. BROOKS.

Q. Where is Mr. Rhodes; Mr. Rhodes is dead, isn't he?

A. He is dead; yes, sir.

Q. You have nothing to do with reference to keeping the books of the Holyoke Water Company? *A.* No, sir.

Q. Those books are kept at the office of the Company, which is some distance away from the gas plant, as it is from the electric plant? *A.* Yes, sir.

Q. And substantially all the books that you have that would throw any light upon the question of the consumption of gas and the expenses is the record of your output? *A.* Yes, sir.

Q. And a record of such material as you purchase? *A.* It is more a record of material we use.

Q. A record of material you use. Substantially all the purchases are made and paid for from the central office? *A.* Yes, sir.

Q. And the men are paid from the central office, the employees of the gas concern? *A.* Yes, sir.

Q. You spoke of one time three years ago when your output was 420,000 cubic feet. Did that last more than a day?

A. It did not.

Q. What was the occasion of that apparent increase over the years before and the years since? *A.* An extremely dark day.

Q. Mr. Matthews, as I understand it, asked you for the number of cubic feet of gas sold last year, and I think you told him 60,000,000 feet. *A.* 60,000,000 feet.

Q. And now do you know what the amount was that was

manufactured during the year? *A.* The amount of gas manufactured?

Q. Yes. *A.* 70,000,000. That is, speaking in round figures.

Q. Yes, sir, I understand. You have nothing to do with the making up of the returns to the gas commission? *A.* No, sir.

Q. That is done at the central office of the concern? *A.* Yes.

Q. Of the Holyoke Water Power Company? *A.* A part is done there at the gas works, the daily record.

Q. When does your fiscal year end? Do you know whether it is in October or not? *A.* October 1.

Q. And the year which is covered by a report to the gas commission ends in July, doesn't it? *A.* June 30.

Q. Yes, the first of July. Whether or not the returns to the gas commission were correct with reference to expenditures or any other item, you don't know? *A.* I do not.

Q. You say you could handle the works more easily with a water gas plant. What do you mean by that? *A.* Well, I may take the day of that extreme send-out as an illustration. As I remember, the day previous was a bright sunshiny day. We sent out about 290,000 feet. That dark day we sent out 420,000. That is an enormous variation, and it is to take care of just such fluctuations as that that a water gas plant is particularly well adapted.

Q. Well, in what way? *A.* If we need more generating capacity in our coal gas benches, from the time of starting the fire till we are making gas, with any fair capacity of the bench, requires 72 hours; while, with this water gas plant, with a fire running as it is left day after day, if there is any demand for gas on a day we don't expect it, it is a mere matter of two hours of blowing that up, clinkering it and blowing it up, and we are making gas at full capacity.

Q. And the coal gas how long? *A.* 72 hours.

Q. When you speak of the total capacity of the one being 325,000 feet, the holder capacity, what do you mean by that? *A.* That is the amount of gas that we can actually store.

Q. And you say 300,000 is the practical working capacity?

A. Yes, sir.

Q. What do you mean by that? *A.* I mean that it is not safe in ordinary running, with the men that we have at the gas works, to trust them filling the holders up to their extreme capacity. There must be a margin for safety that those holders must not raise, or the gas would blow out underneath.

Q. I think you were inquired of with reference to an increase of the purifying capacity. Whether or not you could arrange to increase your purifier capacity by deepening your boxes — pans — and by changing the centre seal, so as to admit of four boxes being used together? *A.* That would be possible, I think.

Q. And whether or not this arrangement of the centre seal is one that has recently been introduced to secure a greater capacity from a given floor space? *A.* I don't quite catch your question.

Q. Whether or not this arrangement of the centre seal is an arrangement that is now in use for securing a greater capacity from a given floor space? *A.* I can't answer your question.

Q. You speak of the service pipes. My friend on the other side asks you if you kept a record of the cost, and I understood you to say the cost of laying those pipes you did keep a record of, or a record was kept of the cost of the laying of the service pipes. *A.* No, sir. If I said that—

Q. I so understood you. *A.* The cost was to the consumer, not to us; just merely a charge for a bill to be made out from.

Q. That is, the customer pays the cost of the laying of the service pipe, and the service pipe still remains the property of the company? *A.* I don't know as I understand that.

THE CHAIRMAN. Does the pipe still remain the property of the company.

MR. BROOKS. Yes, sir.

THE WITNESS. Our practice, if I may explain —

MR. BROOKS. Yes, sir.

THE WITNESS. — has been, without any regard to the location of our mains, to run the service from the main into the customer's cellar, charging them from the curb line into the cellar, the part between the main and the curb —

Q. Remaining the property of the company? *A.* The absolute property of the company.

Q. You don't know how much renewal of pipe there has been since you have been with the company? *A.* I can't tell; no, sir.

Q. Have you any book kept at your office that will tell? *A.* It would tell some; I haven't a complete record.

Q. I think you said that the maximum of the benches used last winter was five? *A.* Yes, sir.

Q. You say you don't know the weight of the various pipes? *A.* No, sir.

Q. Whether it was such pipe as is usually satisfactorily used by gas companies for such purposes? *A.* I know it is pipe of satisfactory thickness.

Q. And such pipe as gas companies usually ordinarily use? *A.* I can't answer that.

Q. Well, now, you have been asked about the per cent. of leakage. That depends altogether upon the miles of main, doesn't it? *A.* No, sir.

Q. Well, how is a per cent. of leakage of any efficacy unless you take into consideration the miles of mains? *A.* You can have a leakage per mile of the main. That is different from a percentage of leakage.

Q. Well, what is the true way of ascertaining leakage? Is it per mile of main or otherwise? *A.* That is a debatable question. I can't answer which the true way is. It depends on each individual, I think.

By Mr. GOULDING.

Q. Is this percentage a percentage of the total gas manufacture? *A.* Yes, sir.

By Mr. BROOKS.

Q. I so understand it; that is the reason I am asking the question. Now a question or two more. Whether or not the fluctuations in the rate of make which are cared for by the

water gas output being varied were made without changing the final candle-power of the mixture? *A.* I think it is possible to do so.

Q. And without the coal gas in the mixture, by varying the candle-power alone of the water gas? *A.* That last part of the question I don't quite catch on to.

Q. Well, it is a mere matter of turning back. *A.* Of taking care of the variation and the send-out?

Q. Yes. *A.* That is all.

Q. Now whether or not this enables you to do all your enriching by means of the water gas, and to run all the coal gas benches at the full capacity? *A.* It enables us to enrich our coal gas, if we so desire. It does allow us to run our coal benches, that we do run, up to the full capacity. We do not have to lay off any benches or retorts, keeping them idle.

Q. Whether or not it is or is not most economical to run your coal gas plant uniformly at its full capacity? *A.* It is the most economical way to run.

Q. Considering the benches only? *A.* Yes, sir.

Q. Does the average rate of make have anything to do with the capacity? *A.* No, sir.

Q. My friend has asked you about the average rate of make, as I understand him, and of the capacity. The make, of course, has nothing to do with the capacity? *A.* No, sir.

Q. By which can you run a smaller holder capacity, the water gas plant or your coal gas plant or the two combined? *A.* The water gas plant.

Q. And why is that? *A.* The water gas is of greater density, greater specific gravity.

Q. And you have the ability of making it quickly as required? *A.* Yes, sir.

Q. That is, do I understand you, in substance, to say that in your water gas plant your holder capacity can safely be retained at a lower figure than would be otherwise safe? *A.* It can be, yes, sir.

Q. Now whether or not it is the practice, as you have observed, and the custom, to build outlying holders instead of increasing the size of the leading mains from the works? *A.* It is.

Q. And whether or not it is common and customary to lay larger mains, I mean in the gas business generally, as the business increases? *A.* Yes, sir.

Q. And is there any objection to the use of even a large portion of the 3-inch and 4-inch mains, providing they are properly fed by leading mains? *A.* Not at all.

Q. And if your pressure is reduced by reason of the increase of the business, whether it is not practical, usual and customary, to lay additional leading mains, tapping the smaller points, or tapping the smaller mains at points as demanded by the development of the business? *A.* It is, so far as I know.

Q. Now supposing that in a street, or section of the street, your established main is found insufficient, what do you do then? What is usual then? Do you lay a main on the other side of the street? *A.* Lay a main to connect into it, at the most advantageous point.

Q. And the two, of course, can be connected, if you have them on the same street? They can be connected at a cross street? *A.* Yes, sir.

Q. Can you tell me, instead of stating your leakage in per cent., what the number of feet lost or unaccounted for per year is? *A.* Last year there was 70,000,000 sent out and 60,000,000 accounted for.

Q. Then there was unaccounted for somewhere in the vicinity of — *A.* 10,000,000.

Q. Have you got that figured accurately? *A.* I have not.

Q. You don't know whether it was 8,000,000 and a trifle over or not? *A.* No; to the best of my memory it was ten.

Q. Now, does not the per cent. vary with the sales and the mileage of pipe? *A.* Yes, sir.

Q. And that varies without increasing the actual leakage? *A.* Yes, sir.

Q. You have in the city of Holyoke between 32 and 33 miles of mains? *A.* Yes, sir.

Q. Then if you divide the total leakage per year by the miles of main, of course you get the leakage per mile of main? *A.* Yes, sir.

Q. You divide that by 365 days, and of course you will get the leakage per day per mile of main? *A.* Yes, sir.

Q. Now is 713 cubic feet per mile per day an unusual leakage in the gas business? *A.* I should think not unusual.

Q. Will you be kind enough to explain to the Commission with reference to the amount of pressure needed to force your gas through the pipes? *A.* We carry a day-time pressure of 2 inches,—which is 2 inches of a column of water. During the heavy hours of burning we increase that to $2\frac{1}{2}$ inches.

Q. Is that any pressure that is damaging to the pipes? *A.* Roughly speaking, it takes 26 inches to make a pound pressure. We are carrying about a thirteenth of a pound pressure on the inside of the pipes most of the time.

Q. Well, is that anything unaccustomed in the gas business, generally? *A.* I think not.

Mr. BROOKS. That is all.

Mr. MATTHEWS. That is all till the books come. Mr. SNOW, when those books are produced from the Company's office, will you produce the books which you kept at your office, too? (The witness assented.)

EDWARD WALTHER, *recalled*.

By Mr. BROOKS.

Q. Mr. Walther, have you made measurements and computations with reference to the buildings upon the gas plant of the Holyoke Water Power Company? *A.* Yes.

Q. And on which plant? *A.* Of this North End plant, we call it.

Q. You mean the large plant? *A.* The large plant.

Q. Will you be kind enough to state what you did, and the result of your computations? *A.* I explained this morning how the buildings were plotted, and from the plans I made an estimate of the quantity.

Q. Now will you begin at the beginning, take each building in the order that you have it there, and give us the computations?

Mr. GREEN. What are these computations, Mr. Brooks,—of what?

Mr. BROOKS. Of brick.

Mr. GREEN. You mean of material that there is there, no prices?

THE WITNESS. No prices at all. I started with the office. Do you want me to read every item?

MR. BROOKS. Yes.

THE CHAIRMAN. Why don't you have that printed, Mr. Brooks?

THE WITNESS. It is all printed. (Exhibiting typewritten copy.)

THE CHAIRMAN. We shall not remember it. I should think you might put it all in just as it is, Mr. Brooks.

MR. BROOKS. If the other side do not object, I will. (The paper was shown to counsel for the respondent.)

MR. GREEN. Will your Honors examine it and see the nature of it? (Showing paper to the Commissioners.)

MR. BROOKS. (After conference with the Commissioners.) We are perfectly willing to put this in.

THE CHAIRMAN. If you want to make any explanations, Mr. Brooks —

MR. BROOKS. We have got to have another witness come to prove the rest of it.

By Mr. GREEN.

Q. You made all these estimates of quantities here yourself? A. Yes, sir.

By Mr. MATTHEWS.

Q. By actual measurements? A. By actual measurement; yes, sir.

By Mr. GREEN.

Q. Not based upon anybody's information? A. Except where it is marked in there. I have told you that in some places where we could not get to the bottom of the under side of the walls to the solid ground, where I was told it goes to rock foundation, that is marked there, and the assumed height was 15 feet. Furthermore, the brick work in the gasometers and in the tanks which is below ground, where we could not get at it in any other way to obtain the depth —

By Mr. GOULDING.

Q. That is estimate? A. That is estimate, according to the Bridge Street gasometer; that was built according to those plans that were made.

By Mr. BROOKS.

Q. How much of this schedule or estimate of quantities of the Holyoke Gas Works is yours? I want to verify the balance of it with another witness. A. Until you come to this Bridge Street gasometer.

By Mr. GREEN.

Q. Is it paged? A. Yes, sir, I think it is paged. After I got through with the tanks that is as far as I went.

By Mr. BROOKS.

Q. Then until you come upon this schedule to the entitlement of "Bridge Street Gasometer," all the estimates and calculations are yours? A. Yes, sir.

Mr. BROOKS. Well, then I will put that much of it in, and I will verify the rest in a moment.

THE CHAIRMAN. All right.

Q. Was that Mr. Sawin that made the other calculations? A. Yes, sir.

WALLACE E. SAWIN, *recalled*.

By Mr. BROOKS.

Q. Did you make the estimates on this schedule entitled "Estimate of Quantities" from the entitlement "Bridge Street Gasometer"? A. I did.

Q. And are those estimates and calculations correct? A. They are.

Q. To the best of your knowledge? A. To the best of my knowledge.

Mr. BROOKS. Well, then I will put in the estimates and calculations in bulk.

The paper entitled "Estimate of Quantities in Holyoke Gas Works," was marked "Ex. 10, F. H. B.," the same being as follows:—

ESTIMATE OF QUANTITIES IN HOLYOKE GAS WORKS.

EXHIBIT 10.

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[illegible]

Gas Works.

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GASOMETER NO. 1.

		@	per yd.
EXCAVATION . . .	5,000 cu. yds.	.	"
BACK FILLING . . .	2,000 cu. yds.	.	"
BRICK WORK . . .	372,440 brick	.	"
STONEWORK . . .	Granite platform 8 brownstone window sills	.	"
LUMBER . . .	12,000 B. M. Labor on 18,000 ft. B. M., including spikes	.	"
	8 windows	.	"
	1 door	.	"
	Roof boards, 6,000 in. B. M.	.	"
SLATING . . .	50 squares	.	"
IRON WORK . . .	Cast iron, 1,000 lbs.	.	"
	Wrought iron, 4150 lbs.	.	"

GASOMETER NO. 2.

[illegible]

DOORS	1 outside door (white pine)	7 ft. x 3 ft.	each
WINDOWS	Double sash (white pine) box frame, 8 lbs.	10 in. x 19 in. glass, segment tops, 23	"
	Windows in cupola, 8 lbs.	8 in. x 12 in. glass, mullion frames, 8	"
FINIAL	1 finial on roof		
HARDWARE			
SLATE	66 $\frac{7}{16}$ slate		per sq.
IRON WORK	55,831 lbs. cast iron		" lb.
CHAINS	12 chains	2,000 lbs.	" "
WEIGHTS	12 weights	12,000 lbs.	" "
BOLTS	1,707 lbs.		" "
TRUSS TIES	6 built truss ties	10,281 lbs.	" "

EXHAUSTER ROOM.

This estimate includes north, south, east, and west walls. Assumed grade of rock 15 ft. below present surface of ground.

EXCAVATION	14 cu. yds.	@	per yd.
BACK FILLING	182 cu. yds.	"	" "
BRICK WORK	71,424 brick	"	" M.
STONEWORK	1 brownstone door sill	"	each
	1 " " cap	4 ft. 6 in. x 8 in. x 1 ft.	"
	4 " " sills	4 ft. 102 in. x 104 in. x 6 in.	"
	4 " " window caps	3 ft. 6 in. x 8 in. x 6 in.	"
	Spruce dimension timber	3 ft. 9 in. x 8 in. x 6 in.	"
LUMBER	Plank	3,169 ft. B. M.	per M.
	Sheathing	1,515 ft.	" "
	White pine roof boards	535 ft.	" "
	Labor on 6,000 ft. B. M., including spikes	860 ft.	" "

**Quantities.
Gas Works.**

EXHIBIT 10.

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DOORS	1 outside door	3 ft. 8 in. x 7 ft. 6 in.	
	1 inside door	3 ft. x 7 in.	
WINDOWS			
SLATING	7½ squares		@
HARDWARE			
PAINTING			
IRON	2 tie rods	1 in. x 30 ft. long, 150 lbs.	"
FIXTURES			

per sq.

" lb.

CONDENSING ROOM.

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes north, east, and west walls.

EXCAVATION	12½ yds.		@
BACK FILLING	326 yds.		"
BRICK WORK	82,392 brick		"
STONEWORK	1 brownstone door sill	4 ft. 8 in. x 8 in. x 1 ft.	"
	6 " window sills	3 ft. 6 in. x 8 in. x 6 in.	"
	6 " caps	3 ft. 9 in. x 8 in. x 6 in.	"
	1 " sill	4 ft. x 6 in. x 8 in.	"
	1 " cap	4 ft. 4 in. x 8 in. x 6 in.	"
	1 " door cap	5 ft. x 10½ in. x 6 in.	"
LUMBER	Spruce dimension timber	3,758 ft. B. M.	per M.
	Plank	1,350 ft. "	"
	Roof boards (white pine)	1,423 ft. "	"
	Labor on	6,500 ft. " (including spikes)	"
Door	1 outside door	4 ft. x 7 ft. 9 in.	each
WINDOWS	3 windows, plank frame, double sash	12 lbs., 10-in. x 15-in. glass	"
	1 window, plank frame, single sash		

per yd.

" "

" M.

each

" "

" "

" "

" "

" "

per M.

" "

" "

" "

each

" "

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes north, south, east, and west walls.

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LIME ROOM.

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes north, south, east, and west walls.

EXCAVATION	26½ cu. yds.	. . . . .	@	per yd.
BACK FILLING	291 cu. yds.	. . . . .	"	"
BRICK WORK	92,376 brick	. . . . .	"	" M.
STONEMWORK	3 granite door sills	. . . . .	"	each
	3 brownstone door caps	. . . . .	"	"
	5 " window sills	. . . . .	"	"
	5 " caps	. . . . .	"	"
LUMBER	Spruce dimension timber	. . . . .	"	per M.
	Floor plank	. . . . .	"	"
	Roof boards	. . . . .	"	"
LABOR AND NAILS	Labor and nails on 6,922 ft. B. M.	. . . . .	"	"
DOORS	3 doors	. . . . .	"	"
WINDOWS	1 window, 6 lts.	. . . . .	"	"
	4 windows, double sash, 12 lts.	. . . . .	"	"
SLATING	11.76 squares	. . . . .	"	" sq.

VALVE ROOM AND WATER-GAS METER ROOM.

Assumed grade of rock 20 ft. below floor.

EXCAVATION	17½ cu. yds.	. . . . .	@	per yd.
BACK FILLING	142 cu. yds.	. . . . .	"	"
BRICK WORK	92,616 brick	. . . . .	"	" M.
FLAGGERS	87½ sq. ft.	. . . . .	"	" ft.
STONEMWORK	1 granite door sill	"	each
	1 brownstone door sill	"	"

Quantities.
Gas Works.

EXHIBIT 10.

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Gas Works.

EXHIBIT 10.

153

GASOMETER NO. 1.

[illegible]

GASOMETER NO. 2.

[illegible]

DOORS	1 outside door (white pine)	7 ft. x 3 ft.	@	each
WINDOWS	Double sash (white pine) box frame, 8 lbs.	10 in. x 19 in. glass, segment tops, 23	"	"
	Windows in cupola, 8 lbs.	8 in. x 12 in. glass, mullion frames, 8	"	"
FINIAL	1 finial on roof . . . . .	. . . . .	
HARDWARE . . . . .	. . . . .	. . . . .
SLATE	66 $\frac{1}{16}$ slate . . . . .	. . . . .	"	per sq.
IRON WORK	55,831 lbs. cast iron . . . . .	. . . . .	"	" lb.
CHAINS	12 chains	2,000 lbs.	"	"
WEIGHTS	12 weights	12,000 lbs.	"	"
BOLTS	1,707 lbs. . . . .	. . . . .	"	"
TRUSS TIES	6 built truss ties	10,281 lbs.	"	"

EXHAUSTER ROOM.

This estimate includes north, south, east, and west walls. Assumed grade of rock 15 ft. below present surface of ground.

EXCAVATION	14 cu. yds.	@	per yd.
BACK FILLING	182 cu. yds.	"	"
BRICK WORK	71,424 brick	"	" M.
STONEWORK	1 brownstone door sill	"	each
	1 " " cap	4 ft. 6 in. x 8 in. x 1 ft.	"
	4 " " sills	4 ft. 102 in. x 104 in. x 6 in.	"
	4 " " window caps	3 ft. 6 in. x 8 in. x 6 in.	"
	Spruce dimension timber	3 ft. 9 in. x 8 in. x 6 in.	"
LUMBER	Plank	3,169 ft. B. M.	per M.
	Sheathing	1,515 ft. "	"
	White pine roof boards	535 ft. "	"
	Labor on 6,000 ft. B. M., including spikes	860 ft. "	"

Quantities.
Gas Works.

EXHIBIT 10.

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DOORS	1 outside door	3 ft. 8 in. x 7 ft. 6 in.	
	1 inside door	3 ft. x 7 in.	
WINDOWS			@
SLATING	7½ squares		
HARDWARE			
PAINTING			
IRON	2 tie rods	1 in. x 30 ft. long, 150 lbs.	"
FIXTURES			

CONDENSING ROOM.

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes north, east, and west walls.

EXCAVATION	12½ yds.		@
BACK FILLING	326 yds.		"
BRICK WORK	82,392 brick		"
STONEWORK	1 brownstone door sill	4 ft. 8 in. x 8 in. x 1 ft.	"
	6 " window sills	3 ft. 6 in. x 8 in. x 6 in.	"
	6 " caps	3 ft. 9 in. x 8 in. x 6 in.	"
	1 " sill	4 ft. x 6 in. x 8 in.	"
	1 " cap	4 ft. 4 in. x 8 in. x 6 in.	"
	1 " door cap	5 ft. x 10½ in. x 6 in.	"
LUMBER	Spruce dimension timber	3,758 ft. B. M.	per M.
	Plank	1,350 ft. "	"
	Roof boards (white pine)	1,423 ft. "	"
	Labor on	6,500 ft. " (including spikes)	"
Door	1 outside door	4 ft. x 7 ft. 9 in.	each
WINDOWS	3 windows, plank frame, double sash	12 lbs., 10-in. x 15-in. glass	"
	1 window, plank frame, single sash		

Quantities.
Gas Works.

EXHIBIT 10.

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PURIFYING ROOM.

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes north, south, east, and west walls.

EXCAVATION	44½ cu. yds.	. . . . .	@	per yd.
BACK FILLING	958 cu. yds.	. . . . .	"	"
BRICK WORK	183,984 brick	. . . . .	"	" M.
FLAGGERS	16 sq. ft.	. . . . .	"	" ft.
STONEWORK	1 granite door sill	. . . . .	"	each
	1 " " step	4 ft. 4 in. x 1 ft. 2 in. x 1 ft. 2 in.	"	"
	3 " " steps	4 ft. 4 in. x 10½ in. x 1 ft. 6 in.	"	"
	1 " " step	4 ft. 4 in. x 7½ in. x 10½ in.	"	"
	1 " " sill	6 ft. x 8 in. x 12 in.	"	"
	14 brownstone window sills	4 ft. 4 in. x 1 ft. 2 in. x 8 in.	"	"
	14 " " caps	4 ft. x 6 in. x 8 in.	"	"
	2 " " "	4 ft. 4 in. x 10½ in. x 6 in.	"	"
	1 " " sill	4 ft. 6 in. x 10½ in. x 6 in.	"	"
	1 " " cap	3 ft. 4 in. x 6 in. x 8 in.	"	"
	Spruce dimension timber	3 ft. 6 in. x 8 in. x 6 in.	"	"
LUMBER	Plank	8,054 ft. B. M.	"	per M.
	Sheathing	2,760 ft.	"	"
	White pine, roof boards	2,800 ft.	"	"
	Labor on 17,614 ft. B. M., including spikes	4,000 ft.	"	"
DOORS	2 doors . . . . .	. . . . .	"	"
	1 door	3 ft. 6 in. x 7 ft. x —	"	each
WINDOWS	8 windows, plank frame, double sash, 18 lbs.,	3 ft. 6 in. x 6 ft. x —	"	"
	6 " " single sash, 3 lbs.	12 in. x 15 in. glass.	"	"
	1 window, " " double sash, 12 lbs.,	12 in. x 20 in. "	"	"
	10,060 lbs. wrought iron	10 in. x 15 in. "	"	"
IRON WORK	792 lbs. cast iron	"	per lb.
	34½ squares	"	" sq.

**Quantities.
Gas Works.**

EXHIBIT 10.

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		@	each " per ft.
DOORS	1 door	3 ft. 6 in. x 7 ft. x —	
WINDOWS	4 windows, plank frame, double sash, 12 lts., 10 in. x 15 in. glass		
ROOF	Tar and gravel roof	488 sq. ft.	
FIXTURES	1 wood bench	7 ft. 6 in. x 2 ft. with vise	
	1 brick forge with bellows		
	1 anvil		
HARDWARE	1 pipe rack		
PAINTING			

PIPE SHOP.

This estimate includes east, west, and south walls.

		@	per yd. " " ft. " yd. " M. each " " " " " per M. " " "
EXCAVATION	130½ cu. yds.		
BACK FILLING	20 cu. yds.		
FLAGGERS	231 sq. ft.		
BRICK PAVING	56½ sq. yds.		
BRICK WORK	42,000 brick		
STONEMWORK	1 brownstone step	4 ft. 2 in. x 1 ft. 2 in. x 8 in.	
	1 " step	4 ft. 2 in. x 1 ft. 2 in. x 8 in.	
	1 " cap	4 ft. 6 in. x 8 in. x 6 in.	
	1 " cap	4 ft. 6 in. x 10 in. x 6 in.	
	8 " sills	3 ft. 6 in. x 6 in. x 8 in.	
	8 " caps	3 ft. 8 in. x 8 in. x 6 in.	
	2 " copings	3 ft. 8 in. x 1 ft. x 9 in.	
	1 " step	4 ft. x 1 ft. x 9 in.	
LUMBER	Spruce dimension timber	2,802 ft. B. M.	
	Roof boards	1,008 ft. "	
	Floor plank	1,225 ft. "	

LUMBER	Labor on 5,035 ft. B. M., including nails	@	per M.
DOORS	2 doors.	"	each
WINDOWS	4 windows, plank frame, 6 lts.	"	"
	4 windows, plank frame, double sash, 12 lts.	"	"
SLATING	8½ squares	"	per sq.

STATION AND HOUSE METER ROOMS.

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes east, south, and west walls.

EXCAVATION	25½ cu. yds.	@	per yd.
BACK FILLING	310 cu. yds.	"	"
BRICK WORK	94,464 brick	"	" M.
STONEMWORK	2 brownstone window sills	"	each
	4 " " "	"	"
	3 " " caps	"	"
	4 " " "	"	"
	5 granite steps	"	"
	1 " step	"	"
LUMBER	Spruce dimension timber	"	per M.
ROOF BOARDS	1,445 ft. B. M.	"	"
FLOOR PLANK	1,824 ft. "	"	"
SHEATHING	1,182 ft. "	"	"
DOORS	1 door	"	"
WINDOWS	2 windows, plank frame, single sash, 6 lts.	"	each
	4 " " double " 18 lts.	"	"
SLATING	12 squares	"	per sq.
LABOR	On 8,386 ft. B. M., including nails	"	" M.

Quantities.

Gas Works.

EXHIBIT 10.

161

LIME ROOM.

Assumed grade of rock 15 ft. below present surface of ground. This estimate includes north, south, east, and west walls.

EXCAVATION	26½ cu. yds.	. . . . .	@	per yd.
BACK FILLING	291 cu. yds.	. . . . .	"	"
BRICK WORK	92,376 brick	. . . . .	"	" M.
STONEWORK	3 granite door sills	4 ft. — 0 in. x 1 ft. 2 in. x 8 in.	"	each
	3 brownstone door caps	4 ft. 6 in. x 10½ in. x 6 in.	"	"
	5 " window sills	3 ft. 4 in. x 6 in. x 8 in.	"	"
	5 " caps	3 ft. x 8 in. x 6 in. x 8 in.	"	"
LUMBER	Spruce dimension timber	3,811 ft. B. M.	per M.	
	Floor plank	1,700 ft. "	"	"
	Roof boards	1,411 ft. "	"	"
LABOR AND NAILS	Labor and nails on 6,922 ft. B. M.	. . . . .	"	"
DOORS	3 doors	3 ft. 6 in. x 7 ft.	"	"
WINDOWS	1 window, 6 lts.	10 in. x 15 in. glass.	"	"
	4 windows, double sash, 12 lts.	10 in. x 15 in. glass.	"	"
SLATING	11.76 squares . . . . .	. . . . .	"	" sq.

VALVE ROOM AND WATER-GAS METER ROOM.

Assumed grade of rock 20 ft. below floor.

EXCAVATION	17½ cu. yds.	. . . . .	@	per yd.
BACK FILLING	142 cu. yds.	. . . . .	"	"
BRICK WORK	92,616 brick	. . . . .	"	" M.
FLAGGERS	87½ sq. ft. . . . .	. . . . .	"	" ft.
STONEWORK	1 granite door sill	4 ft. — 0 in. x 8 in. x 1 ft. — 2 in.	each	
	1 brownstone door sill	3 ft. — 6 in. x 8 in. — 1 ft. — 2 in.	"	"

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WATER-GAS PLANT ROOM.

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STONEWORK	2 brownstone door caps	8 ft. 8 in. x 10½ ft. x 6 in.	@	each
	16 " window sills	5 ft. 8 in. x 8 in. x 8 in.	"	"
	16 " caps	5 ft. 8 in. x 8 in. x 6 in.	"	"
	5 " "	7 ft. 8 in. x 8 in. x 6 in.	"	"
	5 " sills	7 ft. 8 in. x 8 in. x 6 in.	"	"
BRICK PAVING	314 sq. yds.		"	per yd.
IRON WORK	Wrought iron	5,993 lbs.	"	" lb.
	Cast iron	14,568 lbs.	"	"
	Railing	150 ft. 1 in. pipe	"	" ft.
	Trusses	23,609 lbs.	"	" lb.
DOORS	1 door	4 ft. x 8 ft. x 2½ in.	"	each
	1 "	3 ft. x 7 ft. x 2½ in.	"	"
	2 "	12 ft. x 8 ft. x 2½ in.	"	"
	8 mullion frame windows, 24 lts.	8 in. x 16 in. glass	"	"
WINDOWS	8 " "	8 in. x 16 in. "	"	"
	2 " "	12 in. x 16 in. "	"	"
	3 " "	12 in. x 16 in. "	"	"
SLATING	39 squares		"	per sq.
PAINTING				
FIXTURES				
STEAM-ENGINE ROOM IN WATER GAS PLANT.				
EXCAVATION	74½ cu. yds.		@	per yd.
PUDDLING	32½ cu. yds. gravel		"	"
BACK FILLING	31½ cu. yds.		"	"
FLAGGERS	172 sq. ft.		"	" ft.
BRICK WORK	33,600 brick		"	" M.

**Quantities.
Gas Works.**

EXHIBIT 10.

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STONEWORK . . .	1 granite engine bed	8 ft. — 4 in. x 2 ft. 7 in. x 1 ft.	@	each
	1 " door sill	4 ft. — 6 in. x 1 ft. 6 in. x 8 in.	"	"
	1 brownstone cap	. . . . .	4 ft. 6 in. x 6 in. x 9 in.	. . . . .	"	"
	6 " window sills	. . . . .	5 ft. 6 in. x 6 in. x 9 in.	. . . . .	"	"
	6 " " caps	. . . . .	5 ft. 6 in. x 6 in. x 9 in.	. . . . .	"	"
BRICK PAVEMENT . . .	57½ sq. yds.	. . . . .	. . . . .	. . . . .	"	per yd.
LUMBER	Spruce dimension timber	. . . . .	924 ft. B. M.	. . . . .	"	" M.
	Roof boards	. . . . .	774 ft.	. . . . .	"	"
	Labor on 1,698 ft. B. M.	. . . . .	. . . . .	. . . . .	"	"
DOORS	1 door	. . . . .	3 ft. 8 in. x 7 ft. 9 in. x 2½ in.	. . . . .	"	each
WINDOWS	6 windows, mullion frame	. . . . .	. . . . .	. . . . .	"	"
ROOF	Tar and gravel	. . . . .	645 sq. ft.	. . . . .	"	per ft.
FIXTURES	1 radiator with steam connections	. . . . .	. . . . .	. . . . .	"	"
PAINTING . . . . .	. . . . .	. . . . .	. . . . .	. . . . .	"	"

EXCAVATION	747 cu. yds.	. . . . .	. . . . .	. . . . .	@	per yd.
BACK FILLING	223 " "	. . . . .	. . . . .	. . . . .	"	"
PUDDLING	185 " "	. . . . .	. . . . .	. . . . .	"	"
FLAGGERS	1,189 sq. ft.	. . . . .	. . . . .	. . . . .	"	" ft.
CONCRETE	685 sq. yds.	. . . . .	. . . . .	. . . . .	"	" yd.
BRICK WORK	28,5024 bricks	. . . . .	. . . . .	. . . . .	"	" M.
STONEWORK	4 brownstone sills	. . . . .	3 ft. 6 in. x 6 in. x 8 in.	. . . . .	"	each
	4 " caps	. . . . .	3 ft. 6 in. x 6 in. x 8 in.	. . . . .	"	"
LUMBER	Spruce dimension of timber	. . . . .	21,158 ft. B. M.	. . . . .	"	per M.
	" roof boards	. . . . .	11,825 ft.	. . . . .	"	"
	" plank	. . . . .	1,318 ft.	. . . . .	"	"
	Labor, including nails, on	. . . . .	34,301 ft.	. . . . .	"	"

COAL SHED.

LUMBER	4 windows, plank frame, double sash, 12 lbs.	10 in. x 12 in. glass	@	each
	3 windows, plank frame, single sash, 12 lbs.	10 in. x 15 in. glass	"	"
	1 door	3 ft. 6 in. x 6 in. x 1 in.	"	"
	1 door	2 ft. 3 in. x 6 ft. x 1 in.	"	"
	Cornice moulds	130 lin. ft.	"	per ft.
	Face boards	138 ft. B. M.	"	" M.
	Clapboards	1,803 sq. ft.	"	" ft.
ROOF	Shingles	3,403 "	"	"
	Tar and gravel	3,413 "	"	"
IRON WORK	805 lbs. wrought iron		"	" lb.

STORE SHED NO. 1,

EXCAVATION	44½ cu. yds.		@	per yd.
BACK FILLING	37 cu. yds.		"	"
FLAGGERS	400 sq. ft.		"	" ft.
CONCRETE	280 sq. yds.		"	" yd.
LUMBER	Spruce dimension timber	6,363 ft. B. M.	"	" M.
	Hemlock boards	5,203 ft. "	"	"
	Spruce boards	1,254 ft. "	"	"
	Labor, including nails, on	12,820 ft. "	"	"
ROOF	Shingles	2,772 sq. ft.	"	" ft.

TANKS.

Tank No. 1.

EXCAVATION	1,162 cu. yds.		@	per yd.
BACK FILLING	731 "		"	"

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Quantities.
Gas Works.

EXHIBIT 10.

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FENCE	Chestnut posts and plank		3,064 ft.	B. M.	(@)	per M.
Pine	Including zinc flashing	"	4,410 ft.	"	"	" "
SULATE	On windows	. . . . .	111 squares	.	"	" sq.
WIRE SCREEN	On windows	.	485 sq. ft.	.	"	" ft.
WINDOWS	15 windows, box frames and sash, 2 sash	.	12 in. x 18 in., 2 lts. wide, 3 lts. high	.	"	each
	2 " " " 2 "	.	12 in. x 18 in., 3 " 2 "	.	"	" "
	2 " plank " " 1 "	.	12 in. x 18 in., 2 " 1 "	.	"	" "
	16 " " " 2 "	.	12 in. x 18 in., 2 " 2 "	.	"	" "
Doors	2 doors and frames	. . . . .	3 ft. 6 in. x 7 ft. 6 in. x 2 in., 6 panels	.	"	" "
IRON WORK	Wrought, plate girders with lattice work, guides in tank, etc.	. . . . .	17,732 lbs.	.	"	per lb.
	Cast iron, 8 columns, weights, pulley-stands, etc.	.	151,500 lbs.	.	"	" "
	16 grooved chain pulleys	. . . . .	23 in. dia., 2,553 lbs.	.	"	" "
CHAINS	$\frac{1}{2}$ -in. dia. chains	.	272 lin. ft.	.	"	" ft.
IRON BOLTS AND RODS	($\frac{1}{2}$ -in., $\frac{3}{4}$ -in., 1-in., 1 $\frac{1}{4}$ -in., dia.)	.	9,052 lbs.	.	"	" lb.
RAILROAD IRON	(For guides) 60 lbs. per yd.	. . . . .	4,320 lbs.	.	"	" "
PAINTING	Cupola (outside)	.		.		
	Docks and frames	.		.		
	Windows, sash and frames	.		.		
	Iron girders and columns	.		.		
	Fence	.		.		
PIPE	3 $\frac{1}{2}$ -in. wrought iron pipe, overflow from tank to sewer.	. . . . .	85 lin. ft.	.	"	" ft.
	1-in. water pipe with 1-in. valve and shut-off cock	. . . . .	70 lin. ft.	.	"	" "

ENGINEERING, INSPEC-

CTION, AND PLANS

CONTINGENCIES

RETURNS TO GAS COMMISSIONERS.

THE CHAIRMAN (to Mr. Matthews). You have got the returns here; I don't want to see them, but I was just going to ask if they give all the expenditure?

MR. MATTHEWS. Every dollar of expenditure and receipt.

THE CHAIRMAN. The only question is what should go into expense and what into maintenance?

MR. MATTHEWS. All carefully itemized in accordance with the forms of the Gas and Electric Light Commission.

THE CHAIRMAN. What I want to get at is this: do you agree, Mr. Brooks, that these returns contain all the items of expenditure?

MR. BROOKS. Yes, I think I can agree to that, your Honor. I think I can go further and agree that they contain a great deal more, charged under improper heads.

THE CHAIRMAN. Oh, I understand that; but in fact all the money then paid out is in those returns?

MR. BROOKS. I have no doubt it is.

THE CHAIRMAN. Then what difficulty is there for the Commissioners to determine which belong to the several classes?

MR. BROOKS. Because, your Honor, it is not itemized so that you can. I am perfectly willing you should look at the returns; they show for themselves. It is not an itemized report, as I understand it.

MR. MATTHEWS. I understood the Chairman to ask me whether the returns contain all the expenditures. I said yes. I should have said they contain all the expenditures which the Company returns, and it is supposed to return the whole expenditure; but we shall claim that some expenditures have been incurred by the Company, and have not been returned. In other words, our claim will be just the converse of Brother Brooks's.

THE CHAIRMAN. Go on, Mr. Brooks.

WALLACE E. SAWIN, *resumed*.

By MR. BROOKS.

Q. Mr. Sawin, you have here the plans of the pipe lines of the gas department of the Holyoke Water Power Company?
A. I have.

Q. And you can tell me now the various pipes of the various sizes? *A.* Yes, sir.

Q. And the quantities thereof? *A.* Yes, sir, and the location.

Mr. BROOKS. Now, if you gentlemen will look those over and permit me to ask a general question.

Mr. MATTHEWS. Are these the plans this witness referred to this morning?

Mr. BROOKS. Yes, sir.

THE CHAIRMAN. Mr. Brooks, if you will let the other side have them and compare them with your schedule, and they say they are satisfied, there will be no difficulty.

Mr. BROOKS. I thought I would like to put in my totals now.

THE CHAIRMAN. I think you had better leave them, Mr. Matthews, and verify the schedules.

Mr. MATTHEWS. We would like to have the city engineer or Mr. Kirkpatrick go over them this evening.

Mr. BROOKS. We don't want to lose our plans.

Mr. MATTHEWS. How many sheets did the witness produce, Mr. Stenographer?

Mr. BROOKS. He has not stated any number.

THE WITNESS. Twenty-three.

Q. Does that include that (referring to a map of the City of Holyoke). *A.* Yes. There are some notes that are not plotted on it.

Mr. BROOKS. These are the original maps, and the Water Power Company are very solicitous there shall not anything happen to them. They are very aged, some of them; and any place that you are a mind to designate, we will have the maps there and they can be examined by whoever you choose.

Mr. GOULDING. Will somebody undertake to be responsible for them?

Mr. BROOKS. If Mr. Matthews will say he will be responsible for them, we will chance it.

The maps produced as above were severally marked as exhibits, being numbered from 11 to 33 inclusive.

Cross-examination.

By Mr. GREEN.

Q. I do not understand about these, and I should like to ask before we begin to examine them, are they kept, any of them, by yourself? *A.* Yes, sir.

Q. Can you tell where you have added to or taken from them? *A.* Well, hardly; it has been quite a few years.

Q. How many years have you been at work adding to these or drawing upon these? *A.* Well, I have been at work for the Company about twelve years, and probably have worked on those most of the time.

Q. And, as I understand it, these sheets were prepared and made when you went to work there? *A.* Yes, sir, they were all made before I came there.

Q. And who may have, or who had, worked upon them, you don't know? *A.* I couldn't say.

Q. Is there anything on these,—I haven't looked at them,—which shows the dates at which the various additions were made? *A.* No, sir, there is no date.

Q. When the street was piped, or an addition made to the piping of the street, somebody, as I understand from you inferentially, carried it out on some of these plans? *A.* Yes, sir.

Q. But when, or under what circumstances, or by whom, these do not show? *A.* No, sir.

Q. All you know about it is that to some extent you could tell from this plan how much you have added to existing plans during the last ten years? *A.* No, sir, I can't.

Q. You can't distinguish your own writing, and you don't pretend that only a small portion of it is your work? *A.* A small portion.

Q. A very small portion? *A.* On that sheet perhaps there is half of it. All that pencil is mine.

Q. On this one (showing)? *A.* I won't pretend to say how much is mine. All this here (showing), and this over here (showing).

Q. Are these pencil lines yours on that sheet? *A.* Probably all the pencil work is mine.

Q. Probably? Do you know? *A.* I won't attempt to say.

It is several years since they put on some of them. There may have been pencil lines since I took hold of them.

Q. Can you tell by the figures? *A.* Yes, sir.

Q. Look at this sheet I have just handed you. *A.* That is not mine.

Q. That is the pencil line. That is on what street? *A.* Appleton, between Main and Race. On Race, I should say, from Main.

Q. Here are some pencilings described on Elm, and Walnut, and Chestnut. Are they yours? *A.* Yes, sir.

Mr. GREEN. Well, I do not understand, may it please your Honors, that these are in evidence as yet. They have simply been marked and introduced, so that we may examine them; so that I think that is all I care to ask about them now, in preliminary.

Mr. BROOKS. We considered them in.

THE CHAIRMAN. We admit them *de bene*. I think, considering they are valuable plans, they would better be put in some safe here in the Court House.

Mr. BROOKS. I have arranged that Mr. Kirkpatrick, as engineer for the respondents, will make an examination of them Saturday.

THE CHAIRMAN. We ought not to spend any time on the length of the pipe. You have naturally had this thing measured, Mr. Green?

Mr. GREEN. We are not after the length. This Company, in proving their case, we have a right to ask them to prove their case to that degree of certainty that will enable us to get all the information we desire on any point we desire; now, for instance, if their plans, maps, or other papers which they bring here will show age of laying pipe, or time they have been there, all the circumstances and data which we don't know, and would not know, except as we get it from them. I am not getting the number of miles or feet, but I am trying to see if they have got anything here that will show the material of what they are trying to sell us, or the antediluvian age at which they were bought.

THE CHAIRMAN. All right, sir.

Mr. GREEN. Then they are admitted *de bene*, to be examined later?

THE CHAIRMAN. Yes, sir.

Mr. BROOKS. I desire to say, for the benefit of the other side, that we will produce the bills, if necessary, of the pipe that we have purchased from year to year.

Mr. GREEN. For how many years?

Mr. BROOKS. How many years do you want?

Mr. GREEN. We want them all.

Mr. BROOKS. Then I suggest that your expert go over the bills at the Water Power Company's office. Of course, we haven't any bills of piping since we purchased those of the Hadley Company.

Mr. GREEN. I presume not.

Mr. BROOKS. And I understand the Hadley books were burned in the great Boston fire.

Mr. GREEN. I understand that purchase was in 1860.

Mr. BROOKS. If you don't want to go back of 1859, we will rejoice your hearts by showing you that the pipes have been renewed again and again and are in first-class condition, and are in no danger of approaching dissolution.

Now I should like the opportunity to be permitted to call Mr. Humphreys, who will testify, perhaps, a trifle out of the usual orbit; and we will verify any figures that need verification by somebody later.

ALEXANDER C. HUMPHREYS, *sworn*.

By Mr. BROOKS.

Q. What is your full name, Mr. Humphreys? A. Alexander C. Humphreys.

Q. And your place of residence? A. New York City.

Q. And your business? A. Engineer, specially a gas engineer, consulting and constructing.

Q. And for how many years has that been your profession? A. Well, I have been in the gas business twenty-eight years, commencing as an officer of the Company.

Q. I notice that this water gas plant was said to be of the make of Humphreys & Glasgow? A. Yes, sir.

Q. Is that your firm? *A.* Yes, sir, I am senior member of the firm of Humphreys & Glasgow, New York.

Q. What position do you hold in the world of gas? *A.* I am senior member of that firm, president of the Buffalo Gas Companies; Norfolk Gas Company, Norfolk, Virginia; I happen to be president this year of the American Gas Light Association.

Q. And whether your firm has erected many plants and installed machinery therein, both in this country and in Europe? *A.* I have installed a great many plants in this country and in Europe, including as far apart as from New York to Australia.

Q. Will you be kind enough to mention some of the principal plants that you have installed? *A.* The Consolidated of New York. Taking the other side, Liverpool, Brussels, Glasgow, Edinburgh, Bath, Brighton, Amsterdam, Copenhagen (two plants), and a good many others. I don't recollect them.

Q. Were you with the United Gas & Improvement Company at any time? *A.* I went to the United Gas & Improvement Company as constructing engineer, January 1, 1885. About three months later I was made chief engineer and general superintendent, and stayed with them until about the end of the year 1894, in charge of their construction and engineering practice, and for the last five years, I think, have had charge of all the commercial operations as well.

Q. And whether or not you have had to do with the installation of many plants in this country? *A.* My chief connection in that line was having charge of all the installations for the United Gas & Improvement Company. When I joined they had about ten works, and, when I left, about sixty works in different cities.

Q. That means the installation of many plants all through the United States? *A.* Yes, sir.

Q. Will you give some of the principal cities in the United States? *A.* Jersey City, Kansas City, Omaha, Burlington, and many cities about that size, and larger, of course.

Q. How many companies were united with this United Gas & Improvement Company, or went to make it up? *A.* My recollection is about sixty companies in about forty cities. Of course we have in some cities several companies that we have consolidated.

Q. And your knowledge and experience and training cover both branches, coal gas and water gas? *A.* Yes, sir.

Q. I don't know but you had something to do with the installation of some part of the coal gas or the electric plant of the Water Power Company? *A.* No, sir.

Q. And, Mr. Humphreys, whether or not you are acquainted with the values of gas properties and electric properties as well? *A.* Yes, that is chiefly my business at present, valuing such property, either for myself or my clients.

Q. And you know of both the sales and purchases of both electric and gas plants? *A.* Yes.

Q. And you know of the fair market value of the constituents that go to make up the plant? *A.* I think so.

Q. You were called by the Holyoke Water Power Company to make an estimate of the values of this property? *A.* My firm was. I assigned Mr. Randolph to make an estimate of the value of the gas plant.

Q. He is connected with your firm? *A.* Yes, sir.

Q. Who is he? *A.* Mr. Randolph is, like myself, a graduate of Stevens Institute of Technology and has been with me in my present business, and in connection with the United Gas & Improvement Company, I think, for about ten years.

Q. I understood you to say that he made an estimate of the values? *A.* He made an estimate of the value of the gas plant.

Q. You mean the structural value? *A.* Structural value.

Q. Were those figures made under your supervision? *A.* Such supervision as I generally give in such matters. I almost entirely rely upon Mr. Randolph in making all my estimates.

Q. You mean in making all your estimates of structural value? *A.* Yes, sir.

Q. Well, confining ourselves for the present to the gas plant, and upon the theory that Mr. Randolph will be here to-morrow to present any testimony, will you be kind enough to state in detail the structural value of the gas plant in question?

Mr. GREEN. I would like to object to that question. I don't see how this witness can testify on that point.

Mr. BROOKS. I will change my question.

Q. Mr Humphreys, have you made an estimate of the value of the gas plant of the Holyoke Water Power Company?

A. Yes, sir.

Q. Based upon what? *A.* Based upon its earning capacity, local conditions, and the like.

Q. You mean by that, based on earning capacity, or actual earnings? *A.* Actual earnings.

Q. You, together with the gentleman that you have already spoken of, made an examination of the books of the Company, and obtained certain results, did you not? *A.* That examination was made under me, by another assistant, Mr. Foster, W. H. Foster.

Q. He will be here to-morrow? *A.* He will be here to-morrow.

Q. But it was made under your direction? *A.* Yes.

Q. Now, in obtaining your estimate of value, will you be kind enough to describe the process which you pursued? *A.* As in all important work—

Mr. GREEN. I don't suppose that is of any materiality.

By Mr. BROOKS.

Q. I don't suppose it makes any difference. Be kind enough to give your process. *A.* We had an examination made of the books of the Water Power Company, to determine as accurately as possible the actual amount earned in both departments of the business of light, electric and gas. I was careful to give my instructions, and to, as far as possible, verify the results, to see that a careful discrimination was made between capital account and income account,—in other words, to see, if I stated the net profits, that I did not state them in a way

that would show that I had drawn from capital in showing those net profits. That, I might say, would be the fundamental point in my mind in making such an examination. The work was gone into in very considerable detail, and took three or four weeks, and I made a number of trips to Holyoke to go over the work while it was progressing under the hands of Mr. Foster. Knowing that under the peculiar conditions of of Massachusetts practice there had to be returns made to the Commissioners, we of course made our examination with them before us, and therefore we did not select the Company's fiscal year, but the fiscal year of the Commissioners, so that such a comparison could be made.

Q. That would be from July 1, to and including the 30th of the following June? *A.* From June 1, 1897, to June 1, 1898.

Q. Very well. *A.* I would amend that perhaps a little, and say that I followed the returns made by the Company to the Gas Commissioners.

Mr. MATTHEWS. That is, from July 1, to July 1st.

By Mr. BROOKS.

Q. You have the year beginning June 1st, 1897, and ending June 1st, 1898? *A.* Yes, sir. That is the way the Company's returns were made. Whether there is any misunderstanding as to that, I don't know anything about it.

Q. Now, what did you do, and what results did you obtain?

Mr. GREEN. If your Honors please, we understood we had started on a method of computation. When it comes to give the results, we desire to object, and be heard on a good many different points.

By Mr. BROOKS.

Q. Well, what did you do? *A.* Well, we went through the books and accounts of the Holyoke Water Power Company's gas department, and took out such items as were applicable to the two different departments, and made up our own income and expense account for those years. Having done that, we made a comparison with the returns made to the gas commissioners. That showed very considerable differences.

Q. Well, in the general way, of what did those differences consist? *A.* If you will allow me to continue.

Q. Certainly. *A.* We then analyzed the accounts as made by ourselves and as made to the gas commissioners, to determine wherein the differences were, my instructions to Mr. Foster being that of course it was not necessary to make a balance to a cent, but simply to determine with a fair degree of completeness how those differences were made up. For instance, in the gas department for the year ending June 1st, 1897, we came within \$5.40, showing the differences between our report and the report to the commissioners. Of course I have it in detail here.

Q. Will you be kind enough to give it? *A.* For the year —

MR. GREEN. If your Honors please, this is based upon books which we cannot understand so that we can verify them and find the sources of his opinion. He is really giving the results of a subordinate's work in the ascertainment of these figures, based upon books which we have not seen, which we cannot understand without seeing, and which we cannot examine into without a statement drawn from them co-ordinately.

MR. BROOKS. I should not have put him on, but I thought there was an agreement, a substantial agreement, that I could put him on, and put on the gentleman who worked with him, and then, if that gentleman came, that any experts they saw fit to choose might verify the results, if they were verifiable, and otherwise, if it was the other way.

THE CHAIRMAN. I understand, Mr. Brooks, you intend to verify by proper testimony what you are now going into?

MR. BROOKS. That is my intention. As far as it is incompetent, I suppose it should be excluded.

THE CHAIRMAN. You will have the benefit of this tomorrow. If they cannot back it up, why, of course we shall exclude it.

MR. GOULDING. We are proceeding, as we think, in the only possible way. It is impossible for us to put in four or

five witnesses abreast. We cannot drive more than three horses abreast. If two ride on a horse one must ride behind, and what we propose is to show what this gentleman did, and what results he came to. We propose to show the steps of his process, and where his process led him. And now he will have to give figures that were taken from the books. We cannot bring the books down here this afternoon, but we expect to prove every proposition that he states, and we have got to do it beforehand or afterwards. And it is much easier, much more logical, to give his demonstration, and then supply the figures from the sources from which they were derived. My friends on the other side say they want to trace the sources of the witness's opinions. That is precisely what we propose to do, to show the process by which Mr. Humphreys reached the income of this concern for two years, and then to show his valuation of it derived from the income.

Mr. MATTHEWS. The illustration used by the other side about driving two horses abreast is all very well, but we do not ask him to do that. We only ask them to put the horse in front of the cart, and not the cart in front of the horse. This witness is attempting to testify upon information communicated to him by subordinates, based upon book entries which have not been seen by us, and which we need to see in cross-examination. Now, the logical and orderly way is this, it seems to us. They should in the first place produce their books, and then prove that the entries in those books are true. We shall raise no technical objections. But this is not a technical matter. It is substantial. If the entries in those books do not represent the facts (I am not now considering how the items should be apportioned, but the actual expense), they are absolutely worthless. The first thing the Company should do, therefore, is to produce its books, and prove that the entries show the actual expense and income, so that we can examine this witness and his subordinates about them. I understand that is the proper method to pursue, and the books should be produced and the entries verified in the ordinary manner. That could be done, it seems to me, to-

morrow morning at Holyoke, and then this witness could be put upon the stand again for the purpose of making such deductions as are proper; and we should then be furnished with ammunition for cross-examination.

Mr. GOULDING. I don't know what the other side are accustomed to. I am accustomed to just exactly this process. I have no doubt this Court could order the books to be produced; but, after spending three or four weeks in verifying these items, it seems to me the Court will allow this expert to put in his demonstration upon the assurance that we will verify the items, and give them every opportunity to cross-examine the witness. We can have the witness here if necessary in order to cross-examine him with the books, or have him where the books are, if they deem it necessary. But in the first instance, it is impossible for us to put in this evidence, unless we can put it in systematically from the assumptions of the witness, and then prove the assumptions. I think that is the ordinary way.

Mr. MATTHEWS. We do not object to deductions drawn from the books by the expert, but I never heard of deductions drawn from books in a court of law until the books were before the court, and the entries verified. That is the ordinary course of business. Now, from the practical standpoint, our difficulty is this, that this witness is desirous, very naturally, to return home to-morrow night. If these books are not produced to-morrow, or are not verified, and if we haven't had sufficient opportunity to examine them, so as to use them effectively and profitably for cross-examining him, then his testimony goes in, a reasonable opportunity of cross-examination is not afforded, and the case goes on with other witnesses. It is possible, of course, that the witness might return on some future day; but that is wholly uncertain. We have no control over him. He lives out of the State. We do not see what the practical reason is for putting in now the results of book entries which may themselves be put in to-morrow morning.

Mr. BROOKS. We have already agreed that this witness

may be here for any further cross-examination they may desire to make to-morrow.

MR. MATTHEWS. We may not be in a position to cross-examine him to-morrow.

MR. BROOKS. I agreed that he should return later, if desired, and I did not understand that we were to produce the books to-morrow.

THE CHAIRMAN. If the books are not produced the evidence goes for nothing.

MR. BROOKS. You will have every opportunity to examine the books.

MR. MATTHEWS. And, furthermore, I understand that this evidence is only *de bene* anyway. It is subject to verification by the entries in the books, as respecting the income and expenses of the company.

MR. GOULDING. I understand you can call an expert and ask him what the results of a computation of books are. It is not necessary that they should be in or near the court-house unless the Court says so. But in order that the evidence should finally have any effect, the other side have got a right to examine the books, and the side that offers the books has got to show by some sort of evidence that the books show the results that he states. He has not got to go through the figures which have resulted in the conclusion to which he comes. I do not understand — I may be very ignorant, but I do not understand — that it is essential, that there is any rule of law, that the books have got to be in the court-room. They may be in the next room, and if so, in the next building, or the next town, and it would be in the discretion of the Court whether that expert should state the results that he drew from the books. They could not have final effect as evidence unless the other side had opportunity to show, by cross-examination, that they could not be derived from the books.

MR. BROOKS. I suppose we would have the right to put a hypothetical question involving certain figures, and we might verify the figures later on.

THE CHAIRMAN. I understand that to be so. You may call

upon a man, and qualify him, and he may give you an opinion. You may ask him for a reason. Now, if the reason he gives is not satisfactory, the party calling the expert must verify what he says, otherwise his expert may fall down for lack of good reason. I do not see the practical difficulty in letting this witness go forward this afternoon; but it is nearly five o'clock, and we might stop here, rather than embarrass the examination.

MR. GOULDING. Do I understand we are going to Holyoke in the morning?

THE CHAIRMAN. That is what has been contemplated.

Adjourned.

THIRD HEARING.

HOLYOKE, Friday, April 7, 1899.

The Commissioners met in the office of the Holyoke Water Power Company at 10 o'clock A.M.

Mr. BROOKS. May it please the Commission, I think we will temporarily withdraw Mr. Humphreys from the witness stand, and allow Mr. Foster to take his place. If Mr. Foster will step this way.

WILLIAM H. FOSTER, *sworn*.

By Mr. BROOKS.

Q. What is your full name? A. William H. Foster.

Q. And your residence? A. Elizabeth, N.J.

Q. Where is your business? A. 141 Broadway, New York.

Q. And what is that business? A. Public accountant.

Q. And for how many years have you been an accountant?
A. Six years.

Q. And from time to time, many times, you have been called upon to investigate plants, machines, and make a statement thereon? A. Yes, sir.

Q. Were you called upon by the Holyoke Water Power Company to make an investigation of their business, of their gas business for instance, for the years 1897 and 1898? A.

By Mr. Humphreys.

Q. And you did make such an investigation? A. I did.*

Q. When did you begin, or about when did you begin your investigation? A. The latter part of November. Just the date I don't remember now.

Q. 1898? A. 1898.

Q. For how long a time did your investigation, and your work as the result of your investigation, continue? A. Until about the 1st of December. Just the length of time I don't remember.

* Mr. Foster's Schedules of Earnings will be found in Vol. II., p. 209.

Q. Now, in the investigation of the accounts, of the books, relative to the gas works, what do you find to have been the system of the Holyoke Water Power Company with reference thereto? *A.* The Holyoke Water Power Company kept two department accounts, one for the gas company and one for the electric company, income and expense account.

Mr. MATTHEWS. It is understood that the books are here.

Mr. BROOKS. Well, I think they are here. I don't think they have been removed during the night. They are in the building, and anything that you desire we will bring in, and anything you desire to use you shall have every opportunity to use.

Mr. MATTHEWS. We do not care to stand on the order.

By *Mr. BROOKS.*

Q. What did you say you found to have been their system with reference to the accounts of these two departments?

A. They kept two accounts, one an income account, and the other an expense account.

Q. How were those accounts kept? *A.* They were kept by simply entering therein the cash received and cash disbursed under an income and expense account.

Q. Income and expense account, consisting of cash, and that was all substantially? *A.* Substantially all, yes.

Q. And you went into an investigation of those two accounts, income and expense? *A.* I did..

Q. Now, will you be kind enough to tell us for the year ending June 1, 1897, what the gross income of the gas department was?

Mr. GREEN. Is this a question of income?

Mr. BROOKS. Yes.

Mr. GREEN. I think at this point we desire to raise an objection.

THE CHAIRMAN. We will hear you.

Mr. GREEN. I suppose from my brother's opening, and from the facts that have been outlined in his statement, that it is the intention of the Water Power Company to furnish evidence based upon, as far as I can see, present

earnings, or possible future earnings. But in any case, and in order that we may properly state our position and be understood, our claim is that these are entirely improper elements in considering value. We claim that the statute does not permit of their being taken into consideration. Your Honors have read the statute of 1891, and the amendments of 1893, upon which this action is based; that is, section 12 of the one and the amended section 5 of the other. I have brought these statutes, thinking you might not have the law here, or the acts of these particular years. I have here the Act of 1891. In the Act of 1891 the law provided that the price to be paid should be the fair market value of the plant for the purposes of its use, no portion of such plant, however, to be estimated at less than its fair market value for any other purposes, including, the law then said, as an element of value, the earning capacity, such value being based upon the actual earnings being derived from such use.

Further on it was provided that "Such value shall be estimated without any enhancement on account of future earning capacity, or good will, or of exclusive privileges derived from rights in the public streets."

THE CHAIRMAN. This is chapter 370?

Mr. GREEN. This is chapter 370, the way the law stood. That is, in 1891, the legislature had said that when the value of a plant is estimated you can take into consideration present earning capacity, but you cannot take into consideration future earning value or franchise or good will. Now in 1893, the legislature went to work and amended this by striking out the clause which included as an element of value the element of earning capacity. Now it has been said by the learned counsel who represents the Water Power Company that they did that because the language was surplusage. He has told us how, after laboriously studying the law and attempting to derive some meaning from it, they have arrived at that conclusion. Our position is that by this change the legislature struck out those words because they

wanted to say that you cannot take into consideration the present earning value, whereas originally they had said that in the consideration of value you should not take in the future, but you might take in the present earnings. By striking out this clause, they said that it was not to be taken into consideration; so that in considering the value or price to be paid, we say that under the present law neither the present nor the future earning capacity of the plant is to be considered as a factor. Section 1, which my friend Brooks read to you, in stating what the plant is, and the nature of the plant which may be owned by the City, bears out that construction,—that the plant which, as we say, is to be purchased, is the visible, tangible property in possession of the Holyoke Water Power Company, and signifies the gas and electric light plants, the land, the buildings, and the machinery and equipments; and that their value is not to be enhanced by present or future earning values, or franchises, or anything else. We say that that is the clear and obvious meaning of this statute, both from the actual provisions which are inserted, and from the permission to include present earnings which was originally inserted and subsequently been removed by legislative enactment. It is our theory that this has got to be valued for the purposes of its use, so far as it is suitable for this City. In other words, this City having determined to go into the lighting business, wisely or unwisely, it makes no difference, it is going to have a plant; and the plant has got to be built or it has got to be purchased. We must either be permitted to erect such a plant as we want, or we are compelled to buy something that we do not want, because the legislature is bound to protect this property, this plant, to the extent of the enactment. Now the question arises, what could we build a plant for? What is a fair price for a plant suitable for the purposes for which we desire one, a plant that would light this city by electricity, or one that would light this city by gas? What is the value of the plant which exists here as compared with the plant which we might build, which would

be a perfect plant, built up to date, with all modern improvements? We desire simply to outline our position on this point. In the first place we are to get right down to the value of the tangible, physical property of the Water Power Company, not enhanced by earnings, present or future, or by franchises; and then, when we come to estimate that physical, tangible plant, it has a value as compared with that of a perfect plant such as might be built to-day for the purpose of doing our business. What could one be established for at the present time? And, having that before us,—the most perfect plant which could be built, and the most perfect appliances at the present time,—what is this plant which has been built as it is, under the circumstances, with its advantages or disadvantages, what is that worth in comparison with the other? I do not know that I need to go any more deeply into this matter at the present time. The matter is, of course, susceptible of very lengthy argument, with considerable law one way or the other, and I do not desire to go into it as fully as if opening our case; but it seems fair to state at the outset our position as to the valuation. I appreciate the position of the Commission, but still we desire to be understood, that any evidence that comes in may be subject to our exception, and our rights may be preserved, and that your Honors may make a ruling as to what way the evidence is to be presented, understood, or taken by the Court.

Mr. Brooks. May it please the Commission, I suppose that from time immemorial the question of market value has been tested by what the income of the particular property is, present income, or what the income of that particular property might be made to be by proper and conservative management. So that the words "present earning capacity" added nothing to the term "market value" in the statute. It could not make any difference, because before the statute was passed, under a long line of decisions, upon the question of market value there might be received evidence of what the present income was. So that we say that added

nothing to the terms "market value," that it was surplusage simply. Now it cannot be that the legislature intended, as my friend claims, that nothing but the market value of the physical mechanisms as second-hand machinery should be considered. It cannot be that. Otherwise, why were the words *future earnings* left in this statute? It says you shall ascertain the market value, but future earning capacity you shall not take into consideration. What does that mean, if not that you may take into consideration present earning capacity, the present income? I say that that disposes of the contention that is here made. It is significant that the words "future earning capacity" were left in there, and are a part of the statute. Somebody who knew something when they came to amend this statute said, Why, here, present earnings, present income, do not add anything to market value. So that we say we have a perfect right to put in the present income for the years 1897 and 1898, and also we purpose to go further, by proving what the income ought to be of this plant, situated as it is, with the circumstances as they are. I do not know as I care to add anything.

Mr. GOULDING. I should like to add a single word to what my associate has said. I did not expect or advise a precipitation of this discussion, and do not myself intend to enter upon any lengthy exposition of my views of the law with reference to it. The phraseology which was in section 12, chapter 370 of the Acts of 1891, and which was stricken out, is a little peculiar. I think that the real suggestion has not yet been made. We have been discussing the present earning capacity as an element of value. Now it has been well settled by numerous decisions that the market value of property is to be determined by its value either for sale or for valuable use, and you may show what use it can be put to, and therefore you can show what profit can be derived from it now, at present, and how these considerations affect its present value. There is an obvious difference in every lawyer's mind between the element of value and the evidence which tends to prove value. For instance, if a man's lot is

taken, or a part of his lot is taken for a public purpose, the elements of damage are the value of the property actually taken and the effect upon the residue of the property. Those are elements of value. On the other hand, he may show the sale of a piece of property adjacent or near at hand, and similarly situated. That is evidence of value. Now, in this statute of 1891, as to the proposition that the present earning capacities are an element of value, my theory about it is, that when some lawyer who was in the legislature came to have his attention drawn to the subject he said, Why, element of value! It is not an element of value, but it is, at common law — it must be necessarily — evidence. Under the proposition that you can show what use the property is to be put to, it must be evidence of value. And so the clause was stricken out, leaving the law as it was before. You may show what the property is earning now, was earning — not as an element of value, but as evidence before the Court bearing upon the question of the market value, which is the fact to be proved. It is the distinction between the elements of value and the evidence of value. Now, we do not expect if we prove that a certain profit was gained by this Company that that is an element of value, but we understand it to be necessary evidence tending to show the market value. That is the only question here, whether the evidence is competent as tending to show market value. Of course, the suggestion has already been made that they left in the section "future earning capacity." We do not claim anything for future earning capacity, but we do claim everything for present earning capacity.

MR. MATTHEWS. We are unable to see, if the Commission please, the distinction between present and future earning capacity; and if the latter is excluded, as it is by the terms of the act, the former must be also. What do people buy property on when they take earning capacity into consideration, past, present, or future? Why, future earnings. People do not buy a plant because it has earned in the past, if they do not think it is going to earn in the future. They do

not buy a plant because of the earnings it can show in the present, if they do not believe with reasonable certainty that that rate of profit will be maintained in the future. It is, therefore, future earnings that are always taken into account, so far as it is possible to estimate them at the time of the purchase. Therefore, if there had been no change in the law, the exclusion of future earning capacity in the Act of 1893 would also exclude present earning capacity, according to our contention.

We maintain that that would be the rule of law even if this property had been taken by eminent domain, and even in the case that the franchises of the Company were taken and acquired by the City, as well as its physical plant. If the franchises of the Company were taken, they would have some value, but that value would not be solely dependent upon the earnings of the Company; their value would be regulated by other considerations, according to the adjudicated cases. But the franchise of the Company is excluded from the consideration of your Honors in this case. It does not pass to the city. It is voluntarily abandoned by the Company in filing its schedule according to the terms of section 15 of the Municipal Lighting Act of 1891; and it is absolutely out of the case.

Now if this were a taking by eminent domain, the earning capacity could not be introduced, except to the limited extent that that earning capacity was derived from the rent of real estate. This distinction is thoroughly well settled by a long line of adjudicated cases. The rents from real estate can be introduced as tending to show the value of the property taken, but the profits of the business, manufacturing or otherwise, carried on upon the premises, can never be shown, gross or net. Therefore, if this were the ordinary case of a taking by eminent domain, it would not be competent for the petitioners to introduce evidence of profits, gross or net, for any purpose.

But, notwithstanding the argument of counsel for the petitioner, it is very plain, it seems to us, that this is not a taking by eminent domain. We do not care to argue that question at length at this stage of the case. We will simply call

the attention of the commissioners to the fact that that point has been already decided by the Supreme Court of this State in the Newburyport water case, a decision which involved the construction of a statute passed subsequently to that of the municipal lighting law, and modelled upon it. A decision of the Supreme Judicial Court of this State, although it has been questioned in the United States Court for this circuit, is, I suppose, controlling upon this tribunal until it shall have been overruled by the Supreme Court of the United States. And according to that decision, as we understand it, this is not a taking in any sense, but a voluntary sale of property by the Company and a compulsory purchase on the part of the City. Therefore the rules applicable to eminent domain do not apply in any manner; and, if they did apply, the petitioner could not introduce evidence of earnings.

The municipal lighting law was the first statute passed in this country, I believe, providing for the compulsory purchase of a private plant as a condition precedent to the establishment of a public plant, for gas, water, electric light, street railways, or what not else. There had been some similar legislation in England, but none in this country; and the first law to be found in the statute books of this country is the Act of 1891 in question. That was amended in 1893, in the manner which has been sufficiently alluded to by my associate, by striking out whatever there was in the Act of 1891 that might have authorized the commission or court to include earning capacity, or earnings of whatsoever kind.

Then came the Newburyport water act, modelled upon it, using the same phraseology, gentlemen, "without enhancement on account of future earning capacity"; and the Supreme Court of this State has stated that the commissioners in that case were correct in not taking account in their award of the earning capacity of the water plant in question in that case.

Then came the Gloucester water act, which is still under consideration by the courts; and, finally, a fourth act passed in 1897, affecting the town of Stoneham and the Wakefield Water Company. Thus we have four statutes, and only four, I

believe, in this country of this sort. One of them has been the subject of careful consideration by the Supreme Judicial Court of this Commonwealth, and that act involved the same language that is under consideration here. We contend that this question of the admissibility of earnings, past, present, or future, or of any evidence tending to show profits, gross or net, is to be excluded under the decision of the court in *Newburyport Water Company vs. City of Newburyport* in 168 Mass.

As stated by my associate, we do now know to what extent the Commission desires this question argued at this point, but we thought that it ought to be raised. It is the main question of law involved in this case, I suppose; and as to whether it shall be argued and finally settled now, we have no suggestion to offer, as long as our rights are protected.

THE CHAIRMAN. Gentlemen, we will admit this evidence, the application of it to be determined hereafter. That is the practice that has been employed, let me say in passing, with reference to the practice of reserving rights. In the *Newburyport* case, the parties took exception and reserved their rights. They had, I think, a general agreement that each party could take up what questions they pleased, after their case was sent to the court. That is, the side desiring to go up to the full court came before the commissioners and had the exceptions stated, just as though we were sitting as a court, and they printed the exceptions—or they called them exceptions, though it didn't make any difference what they called them—and went up to the full court in that way. So I would suggest that either you have a general agreement and the right to reserve what questions you please, which perhaps is more convenient and saves the bother of excepting anything, or else except specifically to each thing; as, for instance, this. We admit this evidence of income, and if counsel desire their rights reserved they can so state and we will put it on record. We do not wish to pass on the legal effect of this evidence. We simply admit it. We will reserve anybody's rights, and indicate in our report, or before the end of the case.

Mr. GOULDING. This statute is quite different.

Mr. MATTHEWS. Will you pardon me? I would like to have the statement of the Chairman finished.

THE CHAIRMAN. I say, we do not pretend to pass on the legal effect of this evidence now. We reserve that for the future. But, at the same time, we think the parties desiring to be protected should indicate it by asking to have their rights saved, or something of that kind.

Mr. MATTHEWS. We desire to be understood as objecting to all evidence tending to show income, gross or net, and to take exception to the admission of such evidence; but I have no doubt that practically we can agree upon a stipulation such as has been suggested. Isn't that so?

Mr. GOULDING. It does not seem to me that any stipulation is necessary under this statute, which is quite different from the statute sending to a commission the question of damages after the land is condemned, like the Newburyport case.

THE CHAIRMAN. No, it is exactly the same in effect; that is to say, the practical—

Mr. GOULDING. I beg to differ from the honorable Court as to its being just the same.

THE CHAIRMAN. I beg pardon. I do not mean to say the phraseology of this statute with reference to this particular question is like or unlike the Newburyport case. What I mean to say is as to the matter or practice of reserving your rights.

Mr. GOULDING. I think your Honor must have failed to read the 14th section of the 370th chapter as I do.

THE CHAIRMAN. Well, I beg your pardon, I mean—

Mr. GOULDING. There is no such section in any of the other statutes. That is merely as to the manner of raising objection.

THE CHAIRMAN. You are undoubtedly right. It makes no difference to us which way it is done.

Mr. GOULDING. That fourteenth section I think is important.

THE CHAIRMAN. (Reading) "Any party aggrieved by the

award of the commissioner or commissioners may within fourteen days after its filing, or within such longer time as the Court may allow, file objections thereto, and apply to the Court for a hearing on such award relative to any matter of fact or law pertaining to the same, and thereupon the Court shall order a trial to be had before said Court or a justice thereof after due notice to all parties interested in the matter of said award, in the manner of hearings in equity. The decree of the Court upon said award shall be final and binding."

MR. GOULDING. I understand under those water cases like the case of the Dwight Printing Company against Boston, and the Newburyport case, you can raise no law question unless by agreement of the parties. You must appeal to your jury and then raise your law questions, as we did in the Dwight Printing Company case, before the judge, after the appeal from the award or the application for a jury. In that case we waived a jury trial and the questions of law were raised before the judge, and in the first Dwight Printing Company against Boston, the Court expressly held you could not raise any law questions before the commission. Now here it is entirely clear we can, because we can raise the exceptions as we go along and ask the Commission to report them, and then make our objections within fourteen days after.

THE CHAIRMAN. Well, if you think that is the practice.

MR. GOULDING. I only mean to say that I thought there was a clear distinction between this Commission and those commissions in that respect.

THE CHAIRMAN. Yes. I don't think we disagree on that. However, it will do no harm to reserve your rights.

MR. GOULDING. I should think it would be better for us to except as we went along and have it noted, and then your Honors will probably, at our request, report any such matters.

THE CHAIRMAN. Exactly. That is the practice that prevailed in the Newburyport case; that is what I meant to say.

MR. GOULDING. I am willing to make an agreement if necessary.

THE CHAIRMAN. All right. Then your right is reserved, Mr. Matthews, upon any question relating to gross and net income.

Mr. MATTHEWS. Of either plant.

THE CHAIRMAN. Yes, of either plant.

Mr. COTTER. You might add this, that this evidence is not received for the purpose of affecting the future income; for no other purpose than to determine, or which may tend to determine, the value of the property taken.

Mr. GOULDING. We shall have quite a good deal to say about that, if necessary, of more or less importance. We do not think what has been suggested on the other side has much weight, and I suppose they do not think what we have suggested has much weight.

THE CHAIRMAN. I suppose you want simply to put on record the objection you raise, and state it, as you have, very briefly, and very well indeed, if I may add. Go on, then.

By Mr. BROOKS.

Q. What do you find from the books to have been the gross income of the gas department for the year ending June 1, 1897? A. \$74,110.64.

Q. And the expense of the gas department for that same year? A. \$47,043.02.

Q. Now, as shown by the Company's books, what were the profits of that department for that same period?

Mr. GREEN. Of course, our objection to earnings, if your Honors please, also goes to profits and all kindred subjects.

THE CHAIRMAN. Yes, everything relating to it.

Mr. GREEN. For whatever purpose it is introduced?

THE CHAIRMAN. Yes.

Q. Perhaps I will change my question. We have the income; you have already stated that. A. Yes, sir.

Q. And you have already stated the expenses. Now what is the net income that is determined by you from your investigation of the Company's books? A. \$27,067.62.

Q. For the year ending June 1, 1897? A. 1897.

Mr. MATTHEWS. There is some misunderstanding between

my associate and myself. Is this this witness's opinion as to the earnings?

Mr. BROOKS. No, sir.

Mr. MATTHEWS. Or is this what is shown from the books?

Mr. BROOKS. It is what he finds from the books.

Mr. MATTHEWS. Corrected, or as stated in the books?

Mr. BROOKS. You can answer that.

THE WITNESS. Corrected in a manner, to a certain extent.

Mr. MATTHEWS. Corrected by you?

THE WITNESS. In all except one manner.

Q. Now, will you be kind enough to state how you arrive at those figures? A. By detailed examination of the books relating to those departments.

THE CHAIRMAN. I would like to know the details of it.

Q. Now will you be kind enough to give the details?

THE CHAIRMAN. Haven't you a copy of it you could hand to the other side?

Mr. BROOKS. We haven't just at present; we will hand them a copy later.

THE CHAIRMAN. All right, go on.

Q. Be kind enough to give us the details that go to make up those figures. A. I find the receipts from private consumers of gas to have been \$73,533.65; and also the receipts from public lamps—

Q. City lamps? A. City lamps, \$255.21, making a total of—

Q. Haven't you another item in there? A. I was simply going to give the total of that.

Q. Haven't you the services and gas stoves? A. I have. I was going to give the total before that, that was all.

Q. Very well; that is what? A. Making a total of \$73,788.86 for gas receipts, to which I add \$712.83, receipts from services and gas stove sales.

By Mr. MATTHEWS.

Q. Those are receipts from what? A. Services and gas stove sales, making a total gross receipt of \$74,501.69.

By Mr. BROOKS.

Q. What do you mean by the word "services"? *A.* Well, in a few instances I believe the services are paid for by the consumers.

By Mr. GOULDING.

Q. In what? *A.* In a few instances the services laid are paid for by the consumers. From that amount I deduct for bad accounts written off, \$391.05.

By Mr. BROOKS.

Q. Those were accounts already written off? *A.* Already written off; making a total of \$74,110.64.

Q. That is the gross income for that year ending June 1, 1897? *A.* 1897.

Q. Very well. *A.* Expenses. I found that manufacturing, labor, amounted to \$9,836.25; and two-thirds charged to manufacturing, of the salary of the superintendent,—two-thirds manufacture and one-third distribution.

Q. This is all under the head of manufacturing? *A.* This is all under the head of manufacturing.

Q. And to that you charged two-thirds of the salary of the superintendent? *A.* Yes, which is \$1,760.

Q. That is the two-thirds? *A.* Two-thirds. For coal, oil, lime, and freights, \$25,284.68. For repairs and current renewals of works, \$8,522.97. Expense of works, sundry little items, \$105.31. Insurance, which I divided into two-thirds and one-third, two-thirds goes to manufacturing, \$429.68.

By Mr. MATTHEWS.

Q. Fire or liability? *A.* Fire. Making a total gross manufacturing cost, of \$45,938.89. From this gross manufacturing cost I deduct the product of residuals.

By Mr. BROOKS.

Q. Now what do you mean by that? *A.* The by-products of the manufactured gas,—tar, coke, and ammoniacal liquor. For tar I deduct \$4,128.83; coke, \$4,259.72; ammonia, \$835.72, making a total reduction for residuals of \$9,224.27. That, deducted from the gross manufacturing cost, leaves a net manufacturing cost of \$36,714.62.

Q. That is, the tar, the coke, and the ammonia was what the gas department sold during that period? *A.* Sold.

Q. And these three sums of \$4,128.83 and \$4,259.72 and \$835.72 were what they received therefor? *A.* Yes, sir.

Q. Well. *A.* In distribution expense, I found the total, including labor and one-third the salary of the superintendent, to be \$4,039.30.

By Mr. MATTHEWS.

Q. Labor and one-third salary of superintendent? *A.* Including one-third of the salary of the superintendent; yes.

Q. Is what? *A.* \$4,039.30. Repairs and current renewals of meters and services, \$3,176.40.

By Mr. GOULDING.

Q. That includes renewals of mains, too, I think. *A.* Beg pardon?

Q. Does it include renewals of mains? *A.* Mains, meters, and services.

By Mr. MATTHEWS.

Q. How much, please? *A.* \$3,176.40. Office expenses of \$229.80. Stable expenses, \$366.75. Insurance, the other third of the two-thirds mentioned above, amounts to \$214.83.

By Mr. GREEN.

Q. That is one-third? *A.* That is the other third.

Mr. BROOKS. The other third of the insurance that was not included in the manufacturing.

Q. That is fire, not liability? *A.* Yes. Damages paid, \$85.96. The next item I did not find on the Company's books, — a charge of office rent, which I have included, \$270.

By Mr. BROOKS.

Q. That is, there was no charge on the Company's books for office rent? *A.* No, sir.

Q. But you put in the sum of \$270 for rent of office? *A.* Office rent.

Q. That is, you charged it up to this particular department? *A.* To this particular department.

Q. Yes. That makes the total cost of distribution of how much? *A.* \$8,383.04. That, added to the net manufacturing cost, makes \$45,097.66, making a total manufacturing and

distribution expense. To that I add taxes, State and county, \$1,676.24. Right here I will state there is a trifle difference, as I will show later, in the amount of those taxes, which I will show in showing the difference between the Company's figures and mine,—a small clerical error, that is all. The corporation taxes, \$142.30. Taxes to the State Commission and Inspector's departments, \$126.82.

Q. Making a total? *A.* Total tax of \$1,945.36. This makes a total operating cost, including taxes, of \$47,043.02. Those are the details.

Q. And that total expense added to your profit gives you this sum of \$74,110.64 again? *A.* Yes, sir.

Q. Now, Mr. Foster, taking the year 1897 you find a net profit of \$27,067.62? *A.* I do.

Q. Of this particular department. Did you look at the statement that they made to the gas commissioners for substantially that period? *A.* I did.

Q. And did you compare it with the condition as you found it of profit? *A.* The totals, yes.

Q. That is, their statement to the commissioners for that period showed a loss of \$5,720.40? *A.* That is correct.

Q. Now will you be kind enough to tell me what the occasion of that difference is? *A.* That difference is made up—that total difference between the figures would be \$32,788.02.

By Mr. MATTHEWS.

Q. What is the figure beginning five thousand? *A.* The deficit shown by the Company's returns to the gas commissioners is \$5,720.40.

Q. And the other is—

By Mr. BROOKS.

Q. That is the difference between the— *A.* \$32,788.02; that is the difference between my report and the Company's return.

Q. Between the condition as it really was and the condition as it was reported there was a difference of \$32,788.02? *A.* Yes, sir.

Q. Now will you be kind enough to tell us? *A.* Well, the difference between these figures is principally for the reason

that the Company does a cash business. If expenses incurred in previous periods are paid in the next year, they are included in that year's figures as reported to the commission.

Q. That is according to the books? *A.* According to the books. That difference is made up as follows: I find in the year ending June 1, 1897, a payment made for erection of gas plant for the last fiscal year, of \$8,400. It was not an operating expense in any case; and whether it was or not, not applicable to the year in question.

By Mr. MATTHEWS.

Q. Which item was that? *A.* \$8,400.

Q. What was that for? *A.* It was for construction work of the gas plant.

By Mr. BROOKS.

Q. In connection with the new water gas plant? *A.* The new water gas plant.

Q. \$8,400? *A.* \$8,400.

By Mr. GOULDING.

Q. There are two things about it—it was not in that year, and was construction? *A.* It was not applicable to that year in any event, and was a construction item pure and simple, anyway. Also for other extensions of the works, other payments, \$12,791.31.

By Mr. BROOKS.

Q. Now, what was that for? *A.* In connection with the same thing.

Q. That was expended the previous year? *A.* No, it was not. That was in the current year; but it was purely construction work.

Q. It was purely construction work, and should be capital rather than expense? *A.* Capital rather than expense.

Q. Yes. *A.* And extensions of mains and services, \$9,142.01.

Q. Well, why do you say that that should not have been included in expenses? *A.* Because it was the laying of new mains and new services.

Q. That is, that was capital rather than expense? *A.* That was capital rather than expense.

Q. Well? *A.* For new meters purchased, \$1,459.10.

Q. And the same reason, I suppose, applies to that — *A.* The same applies to that.

Q. — as it did to the others. *A.* Then in readjusting the salary account I have taken from one and added to the other.

Q. What do you mean by that? *A.* Well, to apportion the salary that was charged. The Company, you know, has no regular salaried officers to either the gas or water department outside of some of the laborers. The general officers of the Water Power Company are apportioned to the different companies. The new basis of arranging the salaries I can give if you want it.

Q. We will get this total first. *A.* \$1,574 are the salaries. By Mr. MATTHEWS.

Q. That is the difference? *A.* The difference in salaries.

Q. Fifteen what? *A.* \$1,574.

Q. That would be the difference between your apportionment of the salaries and their apportionment? *A.* Yes. You will find it on the other side. Then I find for repairs charged on buildings other than gas property, \$20.28. That makes a total of \$33,387.78. Now I have decreased the profits as shown by the Company's books as follows: Taxes (purely a clerical error), \$5.52. For the rental of office, which I have spoken of before, \$270. Insurance, \$275.81, which I found had not been charged up against the expense; and bad accounts, over those written off by the company, of \$53.83; making a total of —

By Mr. BROOKS.

Q. Profits decreased? *A.* Profits decreased, \$605.16. That makes the total, \$32,782.62, as compared with the difference shown above.

Q. I see that that lacks \$5.40 of the sum of \$32,788.02. *A.* Yes, sir.

Q. What have you to say with reference to that? *A.* Well, it is simply this, that my distribution has been made entirely upon, in an entirely different manner from the distribution made in the Company's books. I have taken each voucher of the Company and gone through it item by item, and made different classifications. If it was necessary I could find

every penny of it; but I could not guarantee how long it would take; but for the purpose of this —

Q. You considered \$5.40 was substantially immaterial?

A. Yes. I could account for every cent of it, but it would take considerable time in adjusting it.

THE CHAIRMAN. I think Brother Brooks had better be charged with that \$5.40.

MR. BROOKS. I think I would rather pay it than go into it, Mr. Chairman.

Q. Now, running back to the "salaries reduced, \$1,574," will you be kind enough to explain that reduction which you made? *A.* The salaries as apportioned between the two departments on the returns to the gas commission I find to be \$7,010 for the gas department, and \$3,220 for the electric light department; total, \$10,230.

By Mr. GREEN.

Q. This is the way they stand on the books? *A.* Yes, sir, on the returns to the gas commission.

MR. GOULDING. You have gone into the electric department?

MR. BROOKS. No, but he is explaining the reduction of salaries.

THE WITNESS. New apportionment of salaries. General office man, at \$3,000 for the two companies. One book-keeper (this is based upon the two companies, one book-keeper and collector), \$1,000. Clerk, at \$660. Those three amounts are divided between the gas and electric plants in the proportion of \$1,800 to the gas plant and \$1,200 to the electric light plant for general office man; for book-keeper, \$600 to the gas, \$400 to the electric light; and for the clerk, \$396 to the gas and \$264 to the electric light. Gas superintendent, \$2,640, and electric light superintendent, \$2,220. Both of these last are unchanged. That will make a total of \$5,436 for the gas; electric light, \$4,084. That would make the difference between new adjustment and the Company's return of \$1,574.

By Mr. GREEN.

Q. Could I ask a question here? I am a little lost on these figures. Is this a readjustment of salaries that are paid,

or your idea of what salaries ought to be paid? Do you simply take the salaries they pay in a few departments, and simply readjust, with the meaning of what ought to be paid? *A.* The total difference in my adjustment is \$800.

Q. You have struck out from what they actually paid some amounts you think they ought not to have paid? *A.* Yes, sir.

By Mr. BROOKS.

Q. This is simply an adjustment? *A.* Oh, yes, pure and simple.

Mr. GREEN. I did not understand that this witness was going into this. I supposed we were to find out what the true facts and figures had been, so far as they had received or paid money. I did not understand that he was to put in his views as to what they should or should not have paid. I object to that. I did not know that was being done.

Mr. BROOKS. I think it is already brought out, if not it will be in a few moments, that the Holyoke Water Power Company owning the two plants, and having all this other business in its books, has, perhaps, several different men looking after the three or four or more businesses, so that when they come to make their report to the Gas Commissioners they take an arbitrary sum and apportion it. Now we say we have a right to reapportion them. That would be fair under the circumstances.

THE CHAIRMAN. If you do that it is all right, but this man does not state how he made out this difference of \$800.

By Mr. BROOKS.

Q. Will you be kind enough to explain how this adjustment by you is made? How it was originally, and what changes you have made? *A.* The salaries are taken from one salary account. The salary to the Gas Company of \$7,000 and to the Electric Light Company of \$3,000 is the arbitrary adjustment, which seemed to be entirely out of proportion to the business done. I have rearranged it, on the basis of salaries which are paid in working companies to-day.

Q. On the basis of salaries paid by light companies in the market? *A.* Yes.

Mr. GREEN. I think that is objectionable, if your Honors please.

THE CHAIRMAN. I think he can state the actual condition, but this witness is attempting to do business for these people.

Mr. BROOKS. We shall prove later, if we are permitted to, that the fair market value for these services, and what is really paid by the Company for the respective plants, is along the line of this gentleman's statements. Of course I assume it is understood that we have not changed the salaries. We have simply changed the apportionments.

THE WITNESS. In reference to this I may say, if I was to take the books as I find them in the gas and electric departments, I would not be sure of any salaries at all. In other words, I have shown salaries of about \$9,000 where they are not shown in the gas department books at all.

Mr. GREEN. The Company has in some way kept accounts of the salaries. They appear in their reports. There is a total difference between the salaries which the witness says he finds charged to these departments of something like \$800. As we have kept this, I understood the witness to say distinctly that he had reapportioned it in that way. We supposed he had simply gone to the books and found what had been incorrectly charged up. There are a dozen objections to this witness doing their business, in form and substance and right.

Mr. GOULDING. Suppose you give us half a dozen of your objections.

Mr. GREEN. There are three of them.

Mr. BROOKS. They have objected to our putting in any testimony without the books. Now, here is something that doesn't show on our books at all, as having been paid out, either for electricity or gas. They have a lump sum in their salary account for the whole business. That account shows a lump sum, and he is undertaking to adjust that.

THE CHAIRMAN. We do not object to that; but in adjusting it, he speaks of \$800 that the Company never employed either one way or the other. Does he claim they employed too much or too little?

By Mr. BROOKS.

Q. What is it with reference to \$800? A. As to the \$800, the salaries as here shown in the return of which the people

here have copies, the Gas Commissioners' return, are simply arbitrary amounts. They are not taken from the books at all.

THE CHAIRMAN. We understood that, but we understand also that, in taking the entire salary account that relates to this business, you have added or taken from it \$800.

THE WITNESS. Not at all. I do not feel myself competent to find out exactly what service every man performs in each position here, for the salary he gets. It is not apportioned and charged by the Company to the different departments. I have simply taken the salary list and made an apportionment, as I know it to be in actual working companies.

Mr. COTTER. How did you get at the \$800?

THE WITNESS. It is the difference between my charge to these two departments and the returns made by the Company to the Commissioners, simply on the basis of what I know to be fair salaries paid for that work.

Mr. COTTER. That is a matter of your own computation?

THE WITNESS. Certainly.

Mr. COTTER. There is nothing on the books that enables you to reach that conclusion?

THE WITNESS. Not at all. No charges at all are made.

Mr. BROOKS. Going over the books we have a very large income, larger than what we are showing here, and this is for the benefit of the other side.

Mr. COTTER. But why should this gentleman give us a judgment on this matter any more than anybody else?

Mr. BROOKS. It seems to us that we have the right to put in evidence of what the fair market value of the services is that should be charged up to both the gas and electric plants, and he has gone upon that theory, so he says; and while there was no adjustment made by the Company, while they charged it in a lump sum, and charged up nothing to either gas or electricity for the salaries, we say we have the right to take a certain portion of the lump sum and charge it up to gas or electricity, on the basis of the fair value of the services required.

Mr. GOULDING. In other words, it is our duty, too.

Mr. BROOKS. Well, we will put it as both right and duty.

THE CHAIRMAN. Of course you can find competent testimony to pass on this question.

Mr. GOULDING. Is it not a satisfactory suggestion that certain sums thus apportioned should be charged to these departments, and this gentleman, in working out his scheme as book-keeper, has taken a sum which he thinks such services are worth in a general way? Isn't it sufficient to say that that is merely tentative, and that we expect to put on Mr. Humphreys, and we expect to show that that is right? It is merely for the purpose of getting at his conclusion. The larger it is the better it is for the other side, of course.

Mr. COTTER. I should be influenced very much more by the judgment of a business manager, somebody who develops a plant, than by a book-keeper, which is the only qualification which this gentleman has shown.

Mr. BROOKS. We understand these are what he knows are paid for such services in the market.

Mr. COTTER. That is very largely hearsay, I suppose.

Mr. BROOKS. But I think I can substantiate it. But, all right.

THE CHAIRMAN. I think you can easily call some one.

Mr. BROOKS. I think the present offer shows these various figures, and that this gentleman is not called to give his judgment. I suppose it would go in *de bene*. This interrupts our calculations here somewhat.

THE CHAIRMAN. The Commissioners do not think it ought to be admitted.

By Mr. BROOKS.

Q. What experience have you had, what knowledge have you had, of salaries paid by gas companies and by electric companies? A. I presume I have been misunderstood. This is not my judgment, this basis of salaries. This is based on the general knowledge of Mr. Humphreys, who has gas business all over the country.

THE CHAIRMAN. Let Mr. Humphreys state when he comes on.

Mr. GREEN. At this point I think we ought to find out if what this gentleman has testified about the gas mains, and

about the apportionment of the extension of gas mains and services, depends upon Mr. Humphreys's judgment. We have proceeded on the assumption that these were taken from the books.

Mr. BROOKS. I think my friend can cross-examine if he wishes to.

Mr. GREEN. Of course we want to know, on this hypothesis, that it was simply a matter of book-keeping.

By Mr. BROOKS.

Q. You have an item of \$5.52 taxes, a difference in figuring. Will you be kind enough to explain that to the Commission?

A. That is the difference between the amount actually paid for corporation taxes. The amount originally paid was \$142.30. The amount charged up in the books was \$136.78.

Q. I see you have that under profits decreased? A. Profits decreased.

Q. Now you have an item of \$53.83 bad accounts? A. That is simply the difference between my findings and the Company's estimate of them. Some of those were subsequently paid. That is what I found should be charged.

Q. That is, you charged for more than the Company? A. Yes, sir.

Q. Now, as a result of your examination of the books, what do you find to be the income for the year ending June 1st, 1898, of this department—the gas department? A. \$80,768.74.

Q. That is the gross income of the gas department for the year ending June 1st, 1898? A. 1898.

Q. Now will you be kind enough to give me the details of those figures? A. Receipts from gas, private consumers, \$80,263.98. From public lamps, \$208.06, making the total receipts from gas \$80,472.04; to which I add the income from the services and gas stoves sold, \$670.43. That would make a total of \$81,142.47.

Q. Less bad accounts written off on the books? A. From which I write off the bad accounts, \$373.73, making a gross of \$80,768.74 income. The expenses, divided as before into manufacturing, distribution, and taxes. Manufacturing, labor, \$10,150.01. Two-thirds of the salary of the superintendent,

as before, \$1,760. Coal, oil, lime, and freight, \$25,855.68. Repairs and current renewals of works, \$4,167.73. Expenses of works, \$107.27. Insurance, two-thirds of the total, \$429.68; making a total gross manufacturing expense of \$42,470.37, from which I deduct residuals,—tar, \$3,776.15; coke, \$3,321.58, making a total reduction for residuals of \$7,097.73.

Q. That is, there was no ammonia sold that year? *A.* No ammonia sold that year. That, deducted from the gross manufacturing cost, would make a net manufacturing cost of \$35,372.64. Distribution expenses: labor, including one-third of the superintendent's salary, \$4,010.82. Repairs and current renewals of mains, meters, and services, \$3,088.23. Office expense, \$242.97. Stable expense, \$350.61. Insurance, one-third (two-thirds charged above), \$214.83. Damages, \$86.30.

Q. That is, damages paid? *A.* Paid by the Company. Office rent, \$270; making a total distribution expense of \$8,263.76. That, added to the manufacturing expense, makes a total manufacturing and distribution expense of \$43,636.40. Taxes, state and county, \$3,189.23. Corporation, \$199.97. State commission and inspectors' departments, \$110.44. Total charge for taxes, \$3,499.64. That makes a total operating cost, including taxes, of \$47,136.04. That, deducted from the gross income, would show a profit of \$33,632.70.

Q. Now the office rent you put in as an expense, although the electric light company paid no office rent. *A.* The gas company?

Q. Yes, the gas company. Now the Company, in their report or return to the Commissioners, stated a profit of \$27,658.82. *A.* That is right.

Q. The profit that you find is \$33,632.70. *A.* Yes.

Q. That is, you increase the earnings over the figures of the Company's report, and increase them as shown by the books, by the sum of \$5,973.88. *A.* That is right.

Q. Now how do you get that increase, as disclosed by the books? *A.* I find in examining the vouchers charged by the Company, that \$1,478.18 was charged as an expense for pure extension of works.

Q. It should not come in under the head of expense? *A.*

Of operating expense. The same thing in regard to new meters, \$1,010.13. The inventory of 1897 over 1898, \$1,308.65.

By Mr. MATTHEWS.

Q. Is that shown on the books? *A.* Yes, sir, this is all shown on the books.

By Mr. BROOKS.

Q. And all these figures, as I understand it, are either shown upon the books or by the vouchers? *A.* With the exception of the rent and salary as mentioned before.

Q. Yes. Now how was this inventory? How was that originally? *A.* Well, the Companies, as will be seen by their statement,—of course I have made adjustments properly belonging to the operating expenses, and they are included in my figures, and that inventory of 1897 over 1898 was purely an inventory of pipe and fitting, which is a construction account, and no increase or decrease of the capital accounts can affect the profits.

Q. Now go on. That item of inventory is \$1,308.65?

A. Yes.

Q. Your next item is salary decreased? *A.* I have the items for that, if you wish it.

Q. Well, go on, and I will ask you for the items later.

A. Salaries, \$1,574.

Mr. BROOKS. We will put in such details as we have.

THE CHAIRMAN. These deductions made by the witness, perhaps, are, you might say, mathematical calculations prepared for the expert. Mr. Humphreys won't have to travel over this same ground, if he takes the same view that this witness apparently has. It is only another way of furnishing information, and is not to be confirmed until Mr. Humphreys takes the stand.

Mr. GREEN. In order to avoid any possible wrong to us in the future, I would like to save any question on it.

THE CHAIRMAN. Of course this witness does not pretend to be able to pass upon these things. He is simply preparing a lot of figures for another man. Now the other man can take them and say, "I furnished these figures for Mr. Humphreys," and let Mr. Humphreys go on the stand.

Mr. GREEN. Of course there is another aspect of that. Of course this is another form of the way in which they are to approach the same question, I take it. I infer, from what is coming, that they are going to offer not only what the plant has done, but what, if it had been properly managed and the book-keeping properly kept, it might have been made to do.

THE CHAIRMAN. It is whether this evidence should go in in this way. I do not understand, so far as his undertaking to make distinctions is concerned, that he is to be treated as an expert on that, but that he has prepared, under the direction of another man, a certain line of figures; and unless that expert confirms them, why, we should hesitate very much in letting him make the distinction.

Mr. GREEN. With that understanding, and understanding also that when the expert comes to use them we can raise all our questions, I have no objection. I am only a little solicitous to have all these points properly saved.

THE CHAIRMAN. Very well; that is your right and duty, of course, and we will be glad to reserve anything now or then.

Q. The sum you have given is \$1,574, salaries decreased. I will go along and I will call your attention to that a little later on, perhaps. Now what is your next item? A. Taxes, \$270.76.

Q. I won't ask you about that until later. A. Bad accounts, \$10.05.

Q. Bad accounts found less than the company's estimate? A. Yes. Mains laid, for land department, \$249.54. Main laid to the high school, \$401.28; making a total of \$6,302.59. I decrease the profits, insurance, \$69.31. That is, the insurance as paid less than charged on the returns for that department. Rental of office, \$270. No rental charged.

Q. By the Company? A. By the Company. Making a total of \$339.31. Total difference accounted for, \$5,963.28.

Q. Now will you be kind enough to explain the item of salaries decreased, and give me the details? A. That is the same.

Q. \$1,574. I guess those are the same figures you gave for 1897. A. Yes.

Q. And the explanation for 1898 is the same that you gave for 1897? *A.* Yes.

Q. Well, you say, taxes \$270.76. Will you be kind enough to explain the difference in figuring? *A.* The taxes were put in on the return as \$3,770.40. The taxes paid were \$3,499.-64, leaving a difference of \$270.76.

Q. Then you have an item of bad accounts found less than the Company's estimate, \$10.05. *A.* I make it \$373.73. The Company charges \$383.78.

Q. That is, \$10.05 had been paid, of that \$383? *A.* Had been paid.

Q. Now you have another item of \$401.28? *A.* Yes.

Q. What was that? *A.* That was for main laid to the high school for the city, which was paid for by the city, and outside of the fiscal year. The same applies to the amount of \$249.54. It was charged to the land department, Sept. 30, 1898.

Q. Now as an accountant, have you also investigated the books of the electric department of the Holyoke Water Power Company? *A.* I have.

Q. And whether or not you not only investigated the books but examined the vouchers? *A.* I did.

Q. For the two years ending June 1, 1897, and June 1, 1898? *A.* I did.

Q. And how long a period did your investigation of this department cover? *A.* The same period as the other.

Q. Now, taking the year ending June 1, 1897, what was the income of the electrical department? *A.* The gross income?

Q. Yes, sir. *A.* \$53,692.28.

Q. Give us the details which go to make up that result. *A.* Incandescent commercial lamps, commercial purposes, \$9,285.97. Public use, \$202.64. Total for incandescent lighting, \$9,488.61. Arc lighting, divided into commercial and public: commercial, \$12,931.59; public lighting, \$24,775.07, making a total from arc lamps of \$37,706.66. For power furnished, \$6,474.75. Sundry miscellaneous items, \$101.47. Total, \$53,771.49, from which I write off rebates and allowances, \$79.21.

Q. Making the total income — *A.* Making a gross income of \$53,692.28.

Q. Now take the other side of the account, the expense account. *A.* The expense account of the electric department.

Q. You divided that into how many heads? *A.* Production expense and distribution expense and taxes.

Q. What was the total production expense for this period ending June 1, 1897, of this department? *A.* Production expense, \$19,273.09.

Q. What was the total distribution expense for the same period? *A.* One moment; I am wrong there.

Q. Well, you mean on the production? *A.* On the production expense.

Q. Well, you can change your figures. *A.* \$18,773.09.

Q. That is the total production? *A.* The total production expense.

Q. For that period? *A.* Yes.

Q. And your total distribution expense for the same period? *A.* \$11,434.59.

Q. And your taxes for this period? *A.* \$3,111.92.

Q. Now will you give us the items that go to make up your production expense? *A.* Labor, \$4,236.35. Coal and water, \$139.99. Repairs and current renewals at works, \$604.93. Water power, \$12,000. That item I have added to. It has been added to.

By Mr. GREEN.

Q. That is, you fixed that yourself? *A.* At \$12,000. It was \$4,500 on the returns of the Company to the commission.

By Mr. BROOKS.

Q. That is, you have put in the water of eight mill powers at \$1,500 per mill power, in rental? *A.* In rental.

Q. \$12,000. Very well. *A.* Salary: two-thirds of the superintendent's, \$1,480. Insurance, in the year 1897, I have divided equally between production and distribution expense, for the reason that there was liability insurance. I divided equally between production and distribution the amount paid,

\$215.29. for the half. Expenses, \$96.53. Making a total for the production of \$18,773.09. Distribution expenses: labor, \$5,914.87. Repairs and current renewals of lines, \$366.76. Office expenses, \$339.83. Salaries, including one-third of the superintendent's, \$2,604. Carbons, globes, and incandescent lamps, \$1,723.84. Rent — that amount is not shown on the books — \$270. Insurance, half, the other half mentioned above, \$215.29. Making a total distribution expense of \$11,434.59. Taxes, State, and county, \$2,788. Corporation, \$216.71. Gas commissioners, \$107.21. Total, \$3,111.92.

Q. You found the total expense, including taxes, to be how much? *A.* \$33,319.60.

Q. Leaving a profit, as shown by the books, of how much, for this department for this period? *A.* \$20,372.68.

Q. Now from that do you make any deduction? *A.* From which?

Q. From the \$20,372.68? *A.* No, sir, I make no deduction from that.

Q. I see under your income you have \$101.47 "Miscellaneous." *A.* Yes.

Q. What does that mean? *A.* Oh, sale of lamps and some things like that. I have not got the items here.

Q. Well, it does not make any difference. *A.* Just sundry little amounts sold by the Company.

Q. You get it \$101.47? *A.* Yes, sir.

Q. Now you say, "Less rebate, \$79.21." *A.* Yes.

Q. What is that item? *A.* Rebates made by the Company on overcharges.

Q. Oh, yes. Running down your expense column, under "Production," you have "Coal and water, \$139.99." *A.* Yes.

Q. I suppose that water was city water? *A.* I presume so; I don't remember the items now.

Q. I didn't want it to go as water power. *A.* Oh, it is not power; it is for bills actually paid.

Q. Bills paid for — *A.* Bills paid by the Company for water.

Q. By the Company to the City for water? A. Yes.

Mr. MATTHEWS. Does that include coal, too?

Mr. BROOKS. Coal and water, \$139.99.

Q. I understand you to say that includes coal? A. Yes.

Q. Now you have, "Water power, eight mill powers at \$1,500 a year." A. \$12,000.

Q. \$12,000 under the head of "Expense." A. Production expense.

Q. That is, the rental of eight mill powers at \$1,500 per annum each? A. It is so stated.

Q. Is that item in the books of the Company? A. No, sir; only part of it is.

Q. You have your superintendent's salary charged, two-thirds under the head of "Production," and one-third under the head of "Distribution." A. Yes, sir.

Q. Under "Production" I see you have "Repairs of station and current renewals." A. Yes.

Q. What does that mean, "Repairs of Station"? Is that anything more than material? A. Oh, yes, repairs at the works.

Q. And current renewals? A. Current renewals, yes.

Q. You have material there; "repairs of station"; material, I understand you?

Mr. MATTHEWS. He did not state that.

Mr. BROOKS. I so understood him.

Mr. MATTHEWS. He said repairs and current renewals.

THE WITNESS. Repairs and current renewals of works; just what that is made up of I do not remember.

Q. Will you be kind enough to look and see? A. No, I could not tell you that. There is a string of vouchers—forty or fifty vouchers there.

Q. Well, you have examined the vouchers? A. I have examined the vouchers.

Q. Is there any labor included? A. No.

Q. Under this head of "Repairs of station and current renewals"? A. No labor at all. The labor is all in a separate item.

Q. That is included in your first item? *A.* A separate item.

Q. Well, that is all I care to find. Now, under the head of "Distribution" you have the item "Repairs and current renewal of lines." *A.* Yes, sir.

Q. "\$366.76." *A.* Yes.

Q. Is any labor included there? *A.* No labor at all.

Q. All material? *A.* All material. I think I am right in stating that. (Examining papers.) No, there is no labor in that.

Q. And you have put in a sum under the head of "Distribution expense," of \$270 for rent of office? *A.* Rent of office.

Q. But, in fact, of course, the Company paid nothing for their office? *A.* No, nothing shown on the books of the Company for that.

Q. Now the report of the Company to the State Commissioners for the year ending June 1, 1897, shows a net profit of \$27,053.93 for the year, does it not? *A.* The Company's report?

Mr. BROOKS. Yes.

Mr. MATTHEWS. The return to the Commissioners?

Mr. BROOKS. The State Commissioners. I guess I am right about that.

Mr. GREEN. On the gas, you mean?

Mr. BROOKS. No, on the electricity.

THE WITNESS. Oh, yes, you are right; \$27,053.93.

Q. You have reduced that sum which is contained in the returns to the Commissioners? *A.* Yes, sir.

Q. You have reduced that by \$9,712.52 or more? *A.* No, the amount of depreciation shown there is on that.

Q. How much do you reduce it? *A.* As I said before, I do not reduce it any. Mr. Humphreys reduced it \$7,500.

Q. It is reduced? *A.* It is reduced \$7,500.

By Mr. MATTHEWS.

Q. You mean \$7,500 exactly? *A.* \$7,500 exactly.

THE CHAIRMAN. If Mr. Humphreys did it, why not let him testify to it?

MR. BROOKS. Of course, we claim that this witness does reduce it and makes the changes himself. I think he will agree to that in a moment, your Honor.

THE CHAIRMAN. Do not misunderstand me, Mr. Brooks. Mr. Humphreys going over that shows how he did it, and if he did it and this witness did not, why not call Mr. Humphreys?

MR. BROOKS. I suppose I have got to show that this witness did it, because he did some of it.

THE CHAIRMAN. It does not make any practical difference.

MR. BROOKS. No, sir.

THE CHAIRMAN. We regard the act of Mr. Humphreys, if he is a qualified expert, as the real act, and why not let him testify to it? This witness has given you all the data he can, hasn't he?

MR. BROOKS. I do not know. I am just looking. I will answer your Honor's question in just a moment, if you will excuse me. (Examining papers.)

By MR. BROOKS.

Q. With the exception of an item of depreciation in this sum reducing the income as contained in the statement to the Gas Commissioners, did you perform this? A. I did.

Q. Have you any item there of construction, material, new work, charged as expense by the Company? A. Yes.

Q. How much is that? A. \$1,982.30.

MR. MATTHEWS. What is that?

MR. BROOKS. Construction; new work charged as an item of expense by the Company.

MR. MATTHEWS. Electric?

MR. BROOKS. Yes, certainly, in this same period.

MR. MATTHEWS. Nineteen hundred?

THE WITNESS. \$1,982.30.

Q. That, you say, is not an item of expense account?

A. Not expense. It is construction; material and new work.

Q. How much, if any, did you increase the salaries? A. I increased the salaries \$864.

Q. And then the rental of the office you have already spoken of? A. \$270.

Q. \$270. That is upon the assumption that the gas and electric departments occupy one office? A. One office.

Q. And you increase the water power charge \$7,500? A. \$7,500.

Q. And the item of depreciation that may come in here you had nothing to do with? A. I had nothing to do with that at all.

Q. Well, allowing for depreciation the sum of \$3,031.27 for that period, how much does that decrease the profits under the statement that was returned to the Gas Commissioners? A. \$9,712.52.

Q. And the difference unaccounted for is \$29.55? A. \$29.55, yes.

Mr. BROOKS. Which you consider unimportant.

THE CHAIRMAN. How much did he call it?

Mr. BROOKS. You mean the income?

THE CHAIRMAN. The income with those things struck out?

Q. The income as you reckon it, with the proper deductions made, you figure \$17,341.41, do you not? A. \$17,341.41, with that deduction.

Q. Now take the income and expenses for the year ending June 1, 1898; what is the total gross income? A. \$56,599.55.

By Mr. GREEN.

Q. That is the gross income for the year ending June 1, 1898? A. For the electric department.

Mr. GREEN. Yes.

By Mr. BROOKS.

Q. How is that made up?

<i>A.</i>	Incandescent: Commercial lighting . . .	\$10,997.26
	" Public lighting . . .	420.23
	Making a total from incandescent of . . .	\$11,417.49
	Arc: Commercial arc lights . . .	\$12,483.98
	" Public arc lights . . .	25,861.17
	Making a total from arc lighting of . . .	\$38,345.15
	Receipts from rental of power . . .	6,659.63
	Sundry miscellaneous items . . .	198.14
	Making a total of . . .	\$56,620.41
	From which I deduct rebates allowed by the Company of . . .	20.86
	That makes a gross income, as stated before . . .	\$56,599.55

Q. And your expense account is divided into three heads — under "Production," "Distribution," and "Taxes?" *A.* Yes.

Q. What is the total of your production expense for this period? *A.* \$19,135.85.

Q. And how made up, if you please?

<i>A.</i>	Of labor . . .	\$4,277.97
	Coal and water . . .	843.37
	Repairs and current renewals at works, . . .	384.51
	Water power . . .	12,000.00
	Salary, two-thirds superintendent . . .	1,480.00
	Insurance (the insurance in this year I have put all into production, be- cause the employers' liability in- surance was not continued; there was none paid in 1898; it was can- celled), the insurance is . . .	150.00
	Making a total production expense of . . .	\$19,135.85

DISTRIBUTION EXPENSE.

Labor . . .	\$5,860.74
Repairs and current renewals . . .	268.22

Q. Of what? *A.* Of lines.

Q. Is it \$268 or \$266? *A.* \$268. I see there is a clerical error in the type-written copy there.

Office expense	\$349.10
Carbons, globes, and incandescent lamps	1,954.49
Salaries, including one-third of the superintendent	2,604.00
Rent (not shown on books)	270.00
Making a total distribution expense of	<u>\$11,306.55</u>

Q. Now the third expense head of taxes?

<i>A.</i> State and county taxes	\$2,686.00
Corporation taxes	168.77
Gas commissioners	84.17

Q. Making a total for taxes of — *A.* Of \$2,938.94.

Q. And that makes your total — well, you have already given the total expenses, including taxes, of — *A.* \$33,381.84.

Q. That leaves us a profit — *A.* That leaves us a profit, as shown by the books, of \$23,218.21.

Q. For this period ending June 1, 1898? *A.* 1898.

Q. Under the head of "Production expense" I think you gave a sum of \$384.51? *A.* Yes, sir.

Q. For repairs of station? *A.* Repairs and current renewals at the works.

Q. Does that item include any labor? *A.* No, sir.

Q. Under the head of "Production expense" should there be included a sum of \$384.51? *A.* There should; repairs and current renewals of works.

Mr. GOULDING. That is in that \$19,000 of total?

Q. And that is comprehended by your total of \$19,135.85 for production expenses? *A.* It is.

Q. For production expenses? *A.* Yes, sir.

Q. And I understand you that that item of \$384.51 does not include labor? *A.* Does not include labor.

Q. Simply materials? *A.* Simply materials.

Q. And you put in for the eight mill powers of water a rental of \$12,000 a year? *A.* \$12,000 a year.

Q. On the same principle and for the same reason that you put it in in the year 1897? *A.* Exactly.

Q. There was no employers' liability insurance during this year of 1898? *A.* I believe not.

Q. And under your distribution of expense you have the item of \$268.22 for repairs and current renewal of lines? *A.* Yes, sir.

Q. Does that include any labor? *A.* No labor at all.

Q. That is comprehended in the previous item—the labor is comprehended in the previous item of \$5,860.74? *A.* Yes, sir.

Q. This item of \$268.22 is simply material? *A.* Simply material.

Q. And you divided the salaries this year the same as the other year? *A.* Yes, sir.

Q. And you put in \$270 for office rent, when, as a matter of fact, there was no office rental? *A.* None shown on the books at all.

Q. Now the report of the Company to the Commissioners for this year 1898, ending, perhaps, June 1, shows what with reference to profits? *A.* The Commissioners' return shows \$30,838.

Q. Was that profit reduced, was that sum as profit reduced by your figures? *A.* It was.

Q. And you reduced it how much? *A.* \$10,651.06.

Q. Leaving net income after all such reductions of \$20,186.94 for the year ending June 1, 1898? *A.* Yes, sir.

Mr. MATTHEWS. We assume that that is the amount of depreciation.

Mr. BROOKS. Certainly.

Q. How is that reduction made up? *A.* That reduction is made up by increasing the profits for construction and material and new work charged as an expense to the Company of \$1,019.24.

Q. That is, they put in extension as expense? *A.* Yes. The profits are decreased by increasing the salary list \$864; for rental of office \$270; for slight errors in taxes, \$5.03; water-power charge increased \$7,500; depreciation for this year, \$3,031.27.

Q. Making a total of your decrease of profits of how much? *A.* Of \$11,670.30. That is a gross decrease. The net decrease is \$10,651.06.

Q. Which is obtained by subtracting from your total decrease this increase of \$1,019.24, which was charged to expense? *A.* Should be construction.

Mr. BROOKS. May it please your Honors, we now offer all the books and vouchers relating to these two plants. They are at the service and disposal of our friends upon the other side.

Mr. MATTHEWS. Have you got them here?

Mr. BROOKS. Yes, sir; right out through the next door.

Cross-examination.

By Mr. MATTHEWS.

Q. Mr. Foster, you are an accountant with special reference to gas and Electric light work, or a general accountant?

A. Public accountant. My business runs more or less in these lines.

Q. Have you any professional education or qualification as a gas engineer or expert? *A.* What I have acquired from my work in this line.

Q. Have you any other qualification, educational or professional? *A.* In what respect?

Q. As a gas engineer. *A.* I don't pose as a gas engineer.

Q. Or as an electric light engineer? *A.* No, sir.

Q. Have you ever had any experience in the construction or erection of electric light plants or gas plants? *A.* Not at all.

Q. Have you ever had any experience in the management of electric light plants or gas plants? *A.* What do you mean by experience?

Q. As a manager or superintendent of an electric light plant or gas plant? *A.* I have not managed them myself.

Q. Your experience with reference to gas and electric light works has been confined to the examination of books and accounts? *A.* Not particularly, because I have designed books, started them, and drawn up the routine, and it has been followed out very successfully.

Q. But you have had no experience in the actual management of gas works or electric light works? *A.* Not at all.

Q. You do not claim to be an expert upon either branch of this inquiry? *A.* Not at all.

Q. Either upon values, or construction, or anything of that sort? *A.* I am not a mechanical expert, but my business has been such that it has enabled me to determine between construction and operating expenses.

Q. That is what I was asking. In your testimony you apportion the expenses of this corporation as between capital and income? *A.* Yes, sir.

Q. That is, between construction and maintenance. *A.* Yes, sir.

Q. From the starting point taken by the Company? *A.* There was no attempt of that kind. I am not going by the Company's books.

Q. Nor by anything you have learned from the Company? *A.* Nothing except in the particulars I have stated.

Q. Isn't it true that the Company has apportioned between construction and maintenance in their reports? *A.* I shall have to look that up before I answer. I believe in two years, in one instance, that they have.

Q. In their returns to the Commissioners? *A.* Yes, sir, in one instance I think they have shown construction items.

Q. In the two years that are covered by your testimony did not the Company apportion their expenses between income and capital in one year? *A.* In one year they did.

Q. In the year ending June 30, 1897? *A.* June 30, 1897.

Q. And you have apportioned that differently? *A.* Yes, sir.

Q. And for the year ending June 30, 1898, you say

that the Company made no apportionment itself? *A.* I didn't say so at all. I said before they did make a slight difference of about \$2,000 in the year ending June 1, 1898.

Q. You have changed that? *A.* Yes, I have.

Q. Then you have changed the apportionment of expenses of the Company between construction and maintenance, and you have also reapportioned the salary account? *A.* I can't say that I have changed the difference between construction and expense account, because there was no such distribution shown on the book. I had to make up my own.

Q. I am referring to the returns to the Gas Commissioners. You have made up your own differently from that? *A.* Yes, sir.

Q. Now did you in making your report, thus differing from that made by the Company in its return to the Commissioners, did you rely on your own knowledge and opinion or upon that of some one else? *A.* I took each voucher, and conferred with the superintendent of the Company, and asked him where such material went, and what it went for.

Q. Did you rely upon Mr. Humphreys for your determination as to how you should apportion those items? *A.* Not at all.

Q. You relied upon your judgment, based upon such information as you obtained from the superintendent of the works? *A.* Of course. In the general line of separating the accounts between capital and expense, as such, I adopted the same method as I pursued in examining any set of accounts for the purpose of distinguishing between capital and expense account.

Q. But you did not receive any particular instructions from Mr. Humphreys in respect to this matter? *A.* No, sir.

Q. I understood you to say that in respect to the reapportionment of the salaries you did receive instructions from Mr. Humphreys in this particular case? *A.* Yes, sir.

Q. But you did not receive such instructions in respect to reapportionment between income and capital? *A.* No special instructions.

Q. And there is nothing in the Company's books to aid you in that apportionment as distinct from their returns to the Gas Company? *A.* Very materially, in the vouchers themselves.

Q. But in the books there was no attempt to apportion them? *A.* No, sir.

Q. And in respect to the vouchers there was nothing in them, of course, to indicate any determination on the part of the Company as to what account they should be attached to? *A.* Indeed there was.

Q. Did you understand my question? *A.* Well, let us have it again.

Q. What did the vouchers indicate? *A.* The vouchers include the bills specifying articles purchased, and with the checks of the superintendents on them.

Q. Is there anything in the vouchers to indicate to which account the Company intended to charge them, as between capital and income? *A.* I have seen so many vouchers since then, I am not able to answer it.

THE CHAIRMAN. I didn't hear what you said.

THE WITNESS. I really am not able to state, without seeing the vouchers, whether that is so or not. As I remember it, it is not, although I think on certain books of the Company there is an attempt made to sub-divide it; but I should have to refer to the vouchers before answering the question.

Q. I understand you to say a moment ago there was no attempt made on the Company's books, as distinguished from their returns, to do this. *A.* There is on some.

Q. You are now referring to a memorandum book kept by the superintendent? *A.* Of the general expenses of the Company.

Q. You mean by the superintendent of the gas works? *A.* Yes.

Q. Mr. Snow? *A.* Yes.

Q. And this statement has no reference to the electric light works; or was there a similar memorandum book kept in respect to that? *A.* I am not able to answer that question.

By the CHAIRMAN.

Q. Have you kept a detailed account of these vouchers?

A. I think there was.

Q. Have you got an itemized account of these vouchers?

A. I have, sir.

Mr. MATTHEWS. I think at this stage we shall have to ask you to bring in these books and vouchers.

Mr. BROOKS. Which books?

Mr. MATTHEWS. The books and vouchers he used for these two years, for the gas and electric light works.

Mr. BROOKS (to the witness). Well, will you be kind enough to go out and have them brought in? I think it will be quarter of one, Mr. Matthews, before they are finally gotten in here.

Mr. MATTHEWS. I do not propose to spend more than ten minutes with this witness, but I want to see what accounts are in them. For instance, it is not quite clear whether or not there is any apportionment attempted by the Company between construction and income on its books, and I want to see those books to that purpose. That won't take two minutes.

Mr. BROOKS. You want the books for the two years of 1897 and 1898? You called for the books of the two years?

Mr. MATTHEWS. The books this witness has been using. I want to assure the Commission that we do not intend to go into an elaborate examination of the books. We propose to follow the usual course; but there are one or two preliminary points that I wish to make clear.

(Pending the production of the books, the noon recess was taken.)

AFTERNOON SESSION.

WILLIAM H. FOSTER, *cross-examination resumed.*

Mr. MATTHEWS. Have you that memorandum book of Mr. Snow's that the witness spoke about?

Mr. BROOKS. I don't recollect what it was now.

By Mr. MATTHEWS.

Q. You stated there was a private memorandum book. Have you that here? A. Yes.

Q. Now, Mr. Foster, will you turn to the ledger of the Holyoke Water Power Company, and point out everything which contains the income and expense of the gas works for the year ending June 1, 1897? A. That is found on pages 214 and 286.

Q. That was the first of the years that you abstracted? A. Yes, sir.

Q. This is Ledger C. Now, this ledger, I notice, contains a few entries only, one or two only in each month, with numbers, indicating that the entries are posted from some other book. Do you know from what other book the entries in this ledger are posted? A. Yes, the income book and the disbursement book, through the journal. It sub-divides the income and disbursements.

Q. Will you produce those books, please, for the same period? A. This is the journal entry.

Q. The other book that you have just produced is the journal? A. I stated it was through the journal.

Mr. BROOKS. What is that journal lettered?

Mr. MATTHEWS. "Journal 3."

THE WITNESS. There is the total income from the gas works from June, 1896, each of the items of which I have checked.

(Witness produces book called "Disbursements D.")

Q. What does this book purport to show? A. Distribution of expenses of the Holyoke Water Power Company in all

its branches, in which will be found the gas works and the electric light works.

Q. Income and expense in each case? *A.* No, this is only disbursements. This only shows the expense.

Q. It is headed "Income and Expense?" *A.* That is simply the name of the account in the ledger.

Q. Does this book, under the head of Gas Works, include all the items that you have apportioned to construction, as well as those which in your opinion should be apportioned to expense for the period in question, the year ending June 1, 1897? *A.* All the expenses are included here with the exception of one small item which comes from another source, from the journal.

Q. What small item which may have come from the journal? *A.* It is a journal entry of gas works income and expense of the carpenter shop, charged to the carpenter, for which the carpenter gets credit in the general distribution account.

Q. Do I understand that the expenses on account of the gas works as shown in "Disbursement Book D" include those which you say should be charged to construction, as well as those which you say should be charged to annual expense? That is, do they include all the disbursements on account of the gas works? *A.* Yes.

Q. This book marked "Disbursements D" is not a book of original entry, is it? *A.* No, sir.

Q. Then, so far you have traced the entries in the ledger, to the journal, and through the journal back to the book marked "Disbursements"? *A.* Yes, sir.

Q. From what book are the entries in the book marked Disbursements posted? *A.* From the Cash Book I.

Q. You will have to explain that so that the Commission will understand that. Will you point out on this cash book the entries which you say are posted in the book marked Disbursements D? *A.* It is shown for the month in question in the total disbursements, amounting to \$15,598.84,— taken from the cash book, I should say.

Q. Is that the item \$15,598.84 which is posted into the book marked "Disbursements D"? *A.* It is.

Q. But it appears in the book marked "Disbursements D" as a footing of a long column of figures? *A.* Yes, sir.

Q. Where in this Cash Book I. are the individual items which appear in the column marked "Gas Works" in the book marked "Disbursements D"? *A.* They are not in there, subdivided. They are in the cash book, by the vouchers, the numbers of which you see there. That voucher might be split up into two or three different accounts.

Mr. GOULDING.

Q. Where is that? *A.* On pages running from 67 to 75, both inclusive, in the cash book.

By Mr. MATTHEWS.

Q. Do you understand that this cash book is a book of original entry? *A.* I do not. Hold on! I am not sure in regard to disbursements. I will have to refresh my memory in regard to the routine. I can do it in a minute.

By Mr. GOULDING.

Q. You can in a minute? *A.* Yes.

Mr. BROOKS. Well, then, take your time and answer the question.

Mr. MATTHEWS. Yes, take your time.

(The witness brought in two more books.)

THE WITNESS. (After examining books.) That is not the book of original entry.

By Mr. BROOKS.

Q. What is not the book of original entry? *A.* Cash Book I.

Q. Cash Book I. is not the book of original entry? *A.* No.

By Mr. MATTHEWS.

Q. From what source are the entries in Cash Book I. posted? *A.* From a check book and this petty expense book.

Q. The petty expense book contains small items only? *A.* Small items only.

Q. Few in number and small in amount? *A.* Yes.

Q. And the remainder of the items which appear in Cash Book I. are taken from check books? *A.* The disbursements.

Q. From the stubs? *A.* From the stubs of the check books.

Q. Then is not Cash Book I. really a book of original entry?

Mr. BROOKS. I suppose that would be a question of —

Mr. MATTHEWS. I don't care to argue it; it is not a matter of any consequence.

Q. You say Cash Book I. is the first general cash book? *A.* Yes, sir.

Q. And prior to that are the check book and the petty cash book. Did you say something about there being a general cash book besides? *A.* That is the general cash book.

Q. I understood you to say there was another general cash book. *A.* There are other cash books, but not general cash books.

Q. What are the other cash books? *A.* Collection books, three or four in number, in which receipts are entered before they appear in this book.

Q. That relates to income only? *A.* Income.

Q. But so far as the disbursements go, this is the first general book? *A.* The first general book.

Q. They are then posted in the book entitled "Disbursements D," from there into the journal, from the journal into the ledger? *A.* From the journal into the ledger; yes, sir.

Q. Now did I understand you to say that the income and expense accounts of the gas works and electric light works as kept by the Company were kept in some book in the form in which they appear in the returns to the gas commission? *A.* As regards the gas company, I don't remember.

Q. The gas works, you mean? *A.* The gas works. I don't remember.

Q. Do you remember in respect to the electric light works? *A.* I believe there is.

Q. Will you produce the book which contains the account similar to that contained in the returns to the gas commission?

(The witness left the room and returned.)

A. With regard to these two books I will say that I did not use them in any manner at all.

By Mr. BROOKS.

Q. What two? A. The books that were just referred to.

By Mr. COTTER.

Q. What are they? A. The books from which the returns to the Commission are made out by the Company. I did not use them at all.

By Mr. MATTHEWS.

Q. You saw them? A. They were open to my inspection, but I did not use them.

Q. You did not use them at all? A. No, sir.

Q. Are they here? A. I presume they are.

Mr. MATTHEWS. We would like to see them.

Mr. BROOKS. You have full liberty if some one will get them. (To witness:) If you know where they are will you be kind enough to get them?

(The witness left the room and returned with the book, which he submitted to Mr. Matthews.)

By Mr. MATTHEWS.

Q. What is the book that you now produce, bound in half morocco, I should say,—calf—?

Mr. BROOKS. Isn't it numbered? Hasn't it a letter?

THE WITNESS. No letter at all.

Mr. MATTHEWS. (Continuing)—apparently unnumbered, upon which there are entries on 25 pages only?

THE WITNESS. I did not use it at all.

Q. Do you know what the book is? A. Well, I presume the book is a sub-division of the expenses, etc., for the purpose of making up the report.

Q. Does this book relate to the gas works? A. Gas works only.

Q. Does it relate to anything besides the gas plant? A. No, not that I know of.

Q. That is, this is a book, as far as you can see, exclusively devoted to the operations of the gas works? A. It is.

(The book produced as above stated was offered in evidence and marked "Ex. 34, F. H. B.")

Mr. BROOKS. Exhibit 34, then, is a book of the Holyoke Water Power Company relating to the operations of the gas works.

THE CHAIRMAN. I suppose the other books are also in?

Mr. BROOKS. Yes; I have not had any mark put upon them.

THE CHAIRMAN. There is no need of marking them if there is some way of identifying them.

Mr. MATTHEWS. There is no way of identifying this. The others I have sought to identify by having the title described, but I could not do so with this book.

THE CHAIRMAN. All those that have been mentioned in the testimony are in evidence, and the vouchers are in, I suppose?

Mr. BROOKS. Yes.

Q. I hand you another book, also unmarked—

Mr. GREEN. I guess most that you want in that book, Mr. Matthews, are in the form of memoranda which are inserted between the leaves.

Mr. MATTHEWS. I will see.

Q. Upon this book there are entries upon the first 73 pages. Will you state what this book refers to? The title page has this on it: "R. C. Winchester, H. W. P. Co." A. A sub-division of electric light expenses for the electric light department for the two years in question; the year ending 1897—

Q. Does this book contain entries relating solely to the electric light plant of the Company? A. I believe it does.

Mr. MATTHEWS. Then, Mr. Stenographer, will you mark that, too?

(The book referred to was marked "Ex. 35, F. H. B.")

Q. I understand that the two books that have just been produced, which contain an analysis of the expenditures on the gas works and the electric light plant, you did not use in making your computations? A. No, sir.

Q. From what source did you make your computations? A. Directly from the vouchers.

Q. From the vouchers? And where did you obtain track of the vouchers, so to speak? *A.* Obtain track?

Q. How did you identify the vouchers which related to the operations of the gas and electric light works? *A.* By the amounts charged in the columns of "Disbursements D."

Q. That is, you took the total disbursements? *A.* I took every voucher and saw that the amounts charged in this column in the gas column and electric light column — I distributed on other sheets.

Q. Then if I understand you correctly, your investigation of the expenditures of this Company on account of these two plants was confined to the items which are entered under those respective heads in the book marked "Disbursements D"? *A.* In the main, yes, sir.

Q. What other sources of information, if any, did you use? *A.* Well, as I said before, there are certain accounts which are not charged in here at all; for instance, taxes account. Taxes account will be found in another column.

Q. What column will you find taxes in? *A.* Well, it will probably be in the sundry column, posted direct.

Mr. BROOKS. Were there any others? Can't you complete that if there are any others besides taxes?

Q. Are there any others?

Mr. BROOKS. Any small items? *A.* The salaries are not in those columns. I do not remember exactly what are not in there now. Whatever adjustments were made —

Q. How did you get at these expenditures? You had here two columns, one marked "Gas Works" and the other marked "Electric light income and expense"? *A.* Yes.

Q. And you examined all the vouchers referred to in those two columns? *A.* Yes.

Q. Now, what information did you have which led you to examine any other vouchers than those mentioned in those two columns? *A.* When I put the results of my work together I found that certain things should be there that were not there, and I had to look them up.

Q. That is, you used your own judgment? *A.* It don't

require very much judgment to find out that a certain expense that should be there is not there.

Q. You looked through those vouchers, and if you thought there was anything that should be there that was not there, you hunted up and asked for the vouchers for that? Is that the idea? *A.* Certainly.

Q. Now, can you state what items you thus produced outside the entries which appeared in the two columns which are devoted to the gas works and electric light plant respectively?

A. I can by using a little time.

Mr. BROOKS. Take your time about it.

Mr. MATTHEWS. Take plenty of time, Mr. Foster; there is no hurry.

THE WITNESS. You are referring now to gas, 1897, are you not?

Mr. MATTHEWS. Either year. You made them both up the same way.

A. (After examination of entries.) I won't state positively that these are all, but so far as insurance, taxes, salaries and office rentals — of course the office rentals, I have already testified were not on the books at all, in any way, shape or fashion —

By the CHAIRMAN.

Q. Those different things are not on the books? *A.* Well, they are in the books, but in different accounts, — the accounts that take in the whole Water Power Company's business.

By Mr. MATTHEWS.

Q. Except the office rent, which was not on the books at all? *A.* Which was not on the books at all.

Q. You spoke this morning about a memorandum book kept by Mr. Snow, I think, at the gas works. Have you got that here? *A.* Yes.

By Mr. BROOKS.

Q. Do I understand you to say that you have the book here — that the book is here? *A.* It is here. Before I answer that question I wish to qualify my remarks about insurance; I am not sure that I am right. I think the in-

surance was charged up regularly into the different departments—the gas and electric light. I will not state that positively, though; I could not tell without going over—

Q. You can tell by examination? *A.* Oh, I can tell by examination, certainly.

By Mr. MATTHEWS.

Q. You would not want to say off-hand? *A.* No.

Q. Now about this book which you spoke about this morning as having been used by Mr. Snow—will you produce that?

A. Yes. (Producing book.) This is the book you have reference to—one of them.

Q. This is a book marked “Journal”? *A.* “Journal”—

Q. Nothing else about it. Now, what are the entries in this book?

Mr. BROOKS. You do not mean you want him to read them?

Mr. MATTHEWS. No.

Q. What do you understand the entries in this book to be?

A. A certain memorandum of the classification of gas expenditures.

Q. The same expenditures that appear in the other books?

A. Yes.

Q. The same expenditures that appear in the vouchers which are referred to in the book marked Disbursements D?

A. Yes, sir.

Q. And this book marked “Journal” is an attempt by Mr. Snow to classify those expenditures? *A.* Yes, sir.

Q. As between income and capital?

Mr. COTTER. The witness occasionally nods his head, and the stenographer does not see him.

Mr. BROOKS. The stenographer cannot take your nod down in any character he has, so you will have to say yes or no.

THE WITNESS. I have not answered it yet.

Mr. MATTHEWS. I did not understand him to answer by a nod, even.

A. (After examining book.) In a measure, yes.

Q. And what is the other book? *A.* A continuation of that book.

Q. And that book is where — here? *A.* That book (indicating).

Mr. MATTHEWS. This is a book also marked "Journal."

(The two books produced as above were offered in evidence and severally marked "Ex. 36, F. H. B.," and "Ex. 37, F. H. B.")

Q. Did you use any other books, Mr. Foster, in your examination than those you have just produced? *A.* Referring only to disbursements now, or to the —

Q. Disbursements. *A.* I think not.

Q. Did you use any other sources of information except the books which have just been produced and identified, and the vouchers? *A.* For what purpose?

Q. For the purpose of making your computations. *A.* I did.

Q. What sources? *A.* I took advantage of the knowledge of Mr. Snow, the superintendent, by going over the vouchers and asking him where certain material was used, for what purposes it was used, and all that sort of thing, and also consulting with Mr. Humphreys in regard to the findings in a general way.

Q. Did you also consult with Mr. Winchester in regard to the disbursements on account of the electric plant? *A.* I did.

Q. But I understand you to say you did not use the accounts prepared by Mr. Snow of the gas works, and Mr. Winchester of the electric light works? *A.* I did not.

Q. And which are kept in the books which have been introduced and marked 34 and 35? *A.* That question is rather misleading. Of course the reason those were not used was simply that the methods I would pursue in subdividing expenses into manufacture and distribution would not accord at all with the way they have been kept in the books.

Q. And you used your own judgment as to how those items should be apportioned? *A.* Not necessarily my own judgment.

Q. To what extent did you rely on the judgment of anybody else? *A.* It is knowledge we pick up from time to time. I cannot say just where I got it, or anything about it, but the general plan is the result of years of experience of men that are a good deal more qualified to do that than I am.

Q. You acted on the judgment that you then were able to form, based upon your experience and knowledge? *A.* Yes.

Q. As an accountant? *A.* Yes.

Q. And you received no instructions from Mr. Humphreys except in the items of depreciation and salaries? *A.* Well, in a general way I consulted Mr. Humphreys, as I always do.

Q. Did you get any special instructions from him in regard to any of the disbursements for either of these plants, except those relating to salaries and depreciation? *A.* Why, certainly; there were certain amounts expended for different purposes, of which I, as a book-keeper, or any one else in my position could not know. For those, I referred to people who were qualified to form an opinion based upon the actual examination of the plant. For instance, so much money would represent expenses in putting up poles here and there and everywhere. I have got to rely upon the examination of a man who looks into that part to find out how much of that was renewals and how much an extension of the works.

Q. Whom did you rely on for that information in this case?

A. I consulted both Mr. Humphreys and Mr. Randolph.

Q. Mr. Randolph? *A.* Mr. Randolph, of Humphreys & Glasgow.

Q. He is of Mr. Humphreys' firm? *A.* Yes, sir.

Q. Can you state more fully in respect to what points you relied on advice given by Messrs. Humphreys and Randolph?

A. I will tell you everything you want if you give me time. (Examining papers.) In the electric company, for the year ending July 1, 1897, I ascertained from the people that forty new poles were erected and thirty-two new connections were made, the charge for the labor for which had been charged directly to labor account as an operating expense. In consultation with those parties I found out what was a proper charge for labor for installing those new poles and making the new connections, and deducted the same from the operating labor and charged it to construction.

Q. Were you furnished with any other books at all besides those that have been produced here and identified?

Mr. BROOKS. You mean with reference to this particular period you are inquiring about, 1897?

Mr. MATTHEWS. Either of these two years. I understand these books cover both years.

Mr. BROOKS. Very likely.

A. As far as expenses go, I think not.

Q. Or the apportionment of the expenses? A. I think not.

Q. Did you see any book which contained anything more than what you have already pointed out as to the manner in which returns were made for the gas commission? A. I don't think I did.

Q. Did you see any book which contained a transcript of the returns to the gas commission? A. Oh, I don't call that a book. I saw the copies of the report.

Q. The copies of the return, you mean? A. The return to the commissioners.

Q. Copies which the Company had made of its returns? A. Yes.

Q. But you saw no book which contained anything more relating to those returns than the two books kept by Messrs. Snow and Winchester respectively, which have been identified?

A. I don't think I did; I couldn't say positively at this time.

Q. Are you certain that there was no book in which those returns are copied out in transcript? A. I don't think I saw any such book. I never heard of such a book. I don't think I did; I won't say positively.

Q. And you think that you have produced and identified all the books that were shown to you? A. Yes, sir; of the expenses.

Q. Relating to disbursements? A. Relating to disbursements?

Q. I am only talking about disbursements. A. If there was any other book I would be glad to tell you, but I don't remember.

Q. You examined the accounts of the Company for only two years? A. Two years.

Q. And you made no examination of the income and expenses of the Company for any prior year? A. Not prior to June 1, 1896.

Q. And I understand you to say that the returns to the gas commission were made up by the Company for the year from June 1 to June 1, and not as they purport to be, for the year from July 1 to July 1? *A.* The year to June 1, 1897 and 1898.

Q. And the returns thus made up for the twelve months beginning June 1 in each year, were returned to the gas commission as the accounts of the Company for the year beginning July 1, in each year? *A.* I don't know that, sir; no. I am not willing to state that.

Q. Well, isn't it a fact? *A.* The reports show for themselves. I don't know.

Q. Have you had the reports of the company? *A.* Well, I have got a copy of them here, yes. I haven't got a copy of the whole transcript. I have just got a copy of that page in question.

Mr. MATTHEWS. I suppose there is no question about it, *Mr. Brooks.* I don't know that it is at all particular.

Mr. BROOKS. I presume very likely it is not.

Mr. MATTHEWS. They are admitted to be copies, as far as they go?

Mr. BROOKS. Oh, yes; if you say so, they are.

Mr. MATTHEWS. Well, I didn't do it myself.

Q. I show you what purports to be a copy of the return of the Holyoke Water Power Company to the Board of Gas and Electric Light Commissioners for the year ending June 30, 1897, and also a copy of what purports to be a return of the Company to the board for the year ending June 30, 1898, and I will ask you whether or not these correspond with the documents that were submitted to you as being the returns of the Company for those two years?

Mr. BROOKS. If you desire, we will give you the copies, whatever copies were submitted to him.

Mr. MATTHEWS. It doesn't make any difference.

THE WITNESS. What is this, the gas or both?

Mr. MATTHEWS. The gas is first.

THE CHAIRMAN. Why don't you let those stand as being all right unless some trouble is discovered? Are they certified?

Mr. MATTHEWS. They are not certified, no. I didn't make them myself, but I assume that they are correct. The Company has its own copies here, too.

Mr. BROOKS. I said you could have those, the copies themselves that were submitted to him, if you desired.

Mr. MATTHEWS. I suppose there is no objection to these going in subject to correction.

THE WITNESS. Do you wish me to check these through?

Mr. MATTHEWS. Will you have to do that?

THE WITNESS. Well, I can state as to the electric company for the year 1897, it is a true copy of what was furnished me, as far as totals go. I have not checked up all the details, but the totals are correct with what was submitted to me.

Mr. MATTHEWS. The witness says the totals are correct, Mr. Brooks.

THE WITNESS. For the electric company for the year ending June 1, 1897.

Q. You have not looked through to see whether the gas returns are correct? A. No, I will do so. (Examining papers.)

THE CHAIRMAN. Are those going in, or isn't it settled yet?

Mr. MATTHEWS. As soon as the witness is through, they will go in, I hope.

THE CHAIRMAN. I thought you were going to use the petitioner's.

Mr. MATTHEWS. He is almost through.

THE WITNESS. The same applies to the gas for the year ending June 1, 1897.

By Mr. BROOKS.

Q. You mean by that the totals? A. The totals only I checked.

By Mr. MATTHEWS.

Q. I call your attention to the fact that this return purports to be a return for the year ending June 30, 1897; that is, from July 1, 1896, to June 30, 1897. I understood you to say that the accounts as made up by the Company really cover the year from June 1, 1896, to June 1, 1897? A. Yes, sir.

Q. That is, a period of twelve months, but beginning one month earlier? A. One month earlier.

Q. And is that true also for the year 1898, as far as you know? *A.* As far as I know, it is.

Mr. MATTHEWS. We will offer the two returns to the gas commission for the year ending June 30, 1897, and June 30, 1898, respectively.

Mr. BROOKS. You mean the copies that you have?

Mr. MATTHEWS. I understand there is no objection to them on the score that they are copies.

Mr. BROOKS. No. If you say they are copies, that is well enough. Do you want to put them in now?

Mr. MATTHEWS. Yes.

Mr. BROOKS. They should be marked "Respondent's exhibits," I suppose.

(Copies of returns, 1897 and 1898, introduced and marked Respondent's Exhibits 1 and 2 respectively).

Q. You have stated the sources of your information, as I understand, to have been the books of the company which have been produced and identified here, the vouchers of the company, and statements made to you by Mr. Snow and Mr. Winchester in reply to your inquiries? *A.* In regard to the uses to which the things have been put.

Q. And also advice given you in some matters by Mr. Humphreys? *A.* Certainly.

Q. And Mr. Randolph? *A.* Yes, sir.

Q. Does that exhaust the sources of information which you had at your command in making your computations? *A.* I don't know of any other.

Q. Will you turn to your minutes for the disbursements on account of gas plant for the year ending June 30, 1897? *A.* All right, sir. What is it?

Q. There is an entry, I see, on page 6, of the Company's return to the gas commission, for that year, of \$37.55 for water. Does that appear in your figure? You didn't state any item of water. It may have been included in something else.

Mr. BROOKS. Coal and water.

Mr. MATTHEWS. That was the electric.

Mr. BROOKS. Well, perhaps I am mistaken.

A. Those were sundry small amounts that were so small I

ran them in as manufacturing expense under the head of "Coal, oil, lime and freight." I see that there is a pencil mark drawn through. I had it "Coal, oil, water, lime and freight." It is included in those amounts. I can show it to you.

Q. Included in the amount footing up \$25,284.68? *A.* What is that?

Q. That is what you gave us as expense on account of coal, oil, lime, and freight. *A.* Oh, yes; I beg pardon.

Q. Now you have an item of \$8,522.97 for repairs and current renewals, as I understood you this morning,—for repairs and current renewals. *A.* \$8,522.97, yes.

Q. Now will you state what you mean by "current renewals"?

MR. BROOKS. Just let me understand. This is gas?

MR. MATTHEWS. This is gas.

MR. BROOKS. I just wanted to turn to it, that is all. 1897, I suppose?

A. Yes. I don't know how to explain it any more fully than it is there,—simply to say that it is such repairs and current renewals in that part of the plant as pertains only to the manufacturing and not to the distribution of gas.

Q. I was endeavoring to draw your attention, not so much to the difference between manufacturing account and distribution account, as between the current renewals, as you call them, and the expenditures for construction of a similar character; and I would like to ask you to explain the theory upon which you call some such expenditures current renewals, and chargeable properly to income, and others you call construction? *A.* I do not make any such distinction. Those items only include such amounts as are repairs or current renewals.

Q. What do you mean by renewals? *A.* It is the replacing of something in existence that has worn out.

Q. What items of that sum did you find in that year—in the aggregate of \$8,522? *A.* I didn't find any. I have reported that as repairs and current renewals.

Q. What were current renewals as distinguished from repairs? *A.* I don't know as I would make any distinction be-

tween them. "Repair and current renewal" is just simply a phrase of speech; it pertains to repairs and current renewals. I don't know how I can explain it any more fully than that.

Q. It is that expression which you adopt to signify the amount which the Company has to pay for repairs? *A.* Not specially I adopt. It is currently adopted in the gas business.

Q. As indicating repairs? *A.* Repairs and renewals.

Q. I want to get at the distinction between those two, if there is any. *A.* I don't know how I can make the thing more plain. Certainly the words "repairs and renewals"—I think it is plain enough for any one.

Q. They are used as interchangeable terms by you, aren't they? *A.* Repairs and renewals, yes.

Q. For about the same thing? *A.* Likely, yes. For instance, you would say there is a repair to a building or there is a renewal of some part of the machinery. It is the same thing. You wouldn't say it was a repair to the machinery necessarily. You might, though.

Q. Now the insurance account of that year you distribute in the proportion of two-thirds to the manufacturing account and one-third to the distribution account? *A.* Yes, sir.

Q. And does the total correspond to the amount paid by the Company that year for insurance against fire? *A.* I believe there is a small difference there, of which I have spoken. I found that the amount paid in insurance was \$275.81 more than charged up by the Company in the report.

Q. Where did you get that \$275? *A.* From the vouchers of the Company.

Q. You found that there was an actual expenditure that had not been charged to the gas works? *A.* Yes, sir.

Q. And you added it in? *A.* I added it in.

Q. And what does that make the total paid by the Company for fire insurance account of its gas plant? *A.* \$644.51.

Q. Do you know what that represented in respect to rate of premium and the amount of the policies? *A.* I don't know that I can give you that. I will see. I haven't the items of that at all. They are easily obtainable, though.

By Mr. BROOKS.

Q. Can you tell by getting your vouchers? *A.* Oh, I can tell by going over the books of the Company, certainly.

Q. Then tell. *A.* I can find out by going over the books of the Company, but I haven't got the information before me at the present time. I can produce it and show it to you.

Mr. MATTHEWS. I will ask him to later, I think. I will not interrupt now for that purpose.

By Mr. MATTHEWS.

Q. You are not able to state off-hand the amount of insurance which that represented? *A.* I am not; no, sir.

Q. Did you consider whether that was a proper amount of insurance to carry? *A.* I think I had some talk in regard to that with the people in authority, but I don't remember what it was now.

Q. With whom? *A.* I think it was Mr. Winchester, the treasurer.

Q. That is, with some of the officers of the Company. You don't remember what that conversation was as to the amount of the property, or as to the value of the property or the amount of the policy? *A.* I can't state off-hand. I can tell you — find out and tell you all about it in regard to the amount of insurance carried, and all that sort of thing.

Q. Do you remember the substance of your conversation with Mr. Winchester on the subject? *A.* It was nothing important.

Q. You didn't consider it important to inquire whether the Company was carrying full insurance or only half or quarter? *A.* I won't say that. The matter of insurance on a plant of this kind is a matter that I would prefer to have a man pass on that is more qualified to tell the value of the plant than I am.

Q. Is there any item of expense in this year for liability insurance connected with the gas plant? *A.* This year? You mean the year of June, 1898?

Q. June, 1897. *A.* I can't tell you off-hand. It comes in under the same question as the other. I can tell you all about it later.

Q. Have you looked up your own tabulation to see whether

it contains any expenditure for liability insurance? *A.* I didn't make any. I didn't state any in the sub-division.

Mr. BROOKS. Not for gas.

Mr. MATTHEWS. I am talking about gas.

Q. There was none, was there? *A.* I am not willing to say there was one.

Q. Where would it be in your tabulation, if there was one?
A. It would be in the insurance totals.

Q. In the \$644.51? *A.* Yes; any item of insurance, whether for fire or liability, would be in that amount. I am unwilling to say whether that is all one or both.

Q. I understood you to say this morning that was all fire.
A. If I did, I wouldn't state that positively, because of course I am not sure. I don't think there was any liability in the gas that year, but there may have been.

Q. And if there was, it would be in that six hundred odd dollars? *A.* Oh, yes, it would all be in that amount.

Q. Now coming to the question of salaries, I wish you would explain a little more fully what you did with the salary account as it appears in the returns to the gas commission, and why you reduced it, and how you apportioned it. *A.* It was one of those amounts that I found that were not charged against income and expenses on the Company's books; and, as I said before, there should be a charge for that thing, and of course I had to get it. That was a mere arbitrary decision. It was a decision which I did not think myself was a fair distribution of salary, and my opinion was borne out in consultation with other parties.

By Mr. BROOKS.

Q. What was a mere arbitrary decision? *A.* The amount charged in the gas return.

By Mr. MATTHEWS.

Q. I call your attention to those items on page 6 of respondent's Exhibit 1. There appears, Item 15, salaries of officers, \$3,900. Item 16, general salaries, \$500. Now, if I understand you, those two items, aggregating \$4,400, did not appear in the books of the Company as charged to the gas plant? *A.* Not at all.

Q. Did they include the salary of the superintendent of the works?

Mr. BROOKS. What do you mean?

Mr. MATTHEWS. Do these two items, aggregating \$4,400, include the salary of the superintendent of the works or not?

Mr. BROOKS. The two items in the return to the gas commissioners, you are talking about?

Mr. MATTHEWS. Yes.

Mr. BROOKS. \$3,900 and \$500; \$4,400 together.

A. I suppose I have got that here somewhere in my papers, but I don't see it. If I can find that report of the Company —

Mr. BROOKS. You mean a return of the Company?

THE WITNESS. The return, yes.

Mr. BROOKS. Is that what you want?

THE WITNESS. The one the Company owns. I think it is so marked. I suppose I have got it here somewhere, but I don't seem to see it just this minute.

Q. Will you take that? Is that the one? *A.* 1897, yes.

Q. Where is the item \$1,760, and the other one-third of the superintendent's salary which you have given; where does it appear in the returns to the gas commissioners? *A.* I will take back that answer that I cannot tell about it. That \$3,900 is represented by \$2,400 to Mr. W. H. Snow's salary and \$1,500 of E. S. Waters's salary.

Q. Did you take in the whole of Mr. Snow's salary, \$2,400, or a part only? *A.* In what?

Q. In your computation. *A.* That was for the year 1897. No salary has been raised since then. I took the present salary.

Q. I am asking about the year ending June 1, 1897. You say the \$3,900 which appears here as salaries of officers was made up of \$2,400 to Mr. Snow and \$1,500 to Mr. Waters? *A.* Yes, sir.

Q. How much of those items did you include in your computation as to the expenses of the different companies? *A.* I just answered that, by stating I apportioned the salary on the same basis as the salary to the superintendent at the present time, \$2,640.

Q. That is, you add \$240 to Mr. Snow's salary for the year ending June 1, 1897? *A.* That is what it amounts to.

Q. What do you do with Mr. Waters's salary, the \$1,500?

A. I simply did not consider it.

Q. You threw it out? *A.* I did not consider it, because these are reached from entirely different sources. These are arbitrary amounts, put in the returns. I have stated the basis on which the salary of those two years was made up.

Q. What items in your computation correspond to the \$4,400 in the report? You say Mr. Snow's is taken intact, and Mr. Waters's salary you have ignored? *A.* No, I have not ignored it. It will be found embodied in the general salary list.

Q. That you said was \$4,660? *A.* That is for the two companies, for the two plants.

Q. You have taken the amounts which appear in the reports to the gas commission as paid to the general officers of these two plants, and substantially it amounts to \$3,000, to \$1,000, and \$660; that is, \$4,660, all told? *A.* Taking the two plants together. No, that is not right. It is not right, for the reason that the superintendents of the gas plant and the electric light plant salaries are not included, one of which is \$2,640 and the other \$2,220.

Q. Where are the \$2,640 and the \$2,220? Where do those appear in the schedule which you gave us this morning?

A. They were shown in each year under the head of Gas Company, two-thirds to manufacturing, and one-third to distribution; and Electric Light Company, two-thirds to production, and one-third to distribution.

Q. Will you pick those items out? You gave two-thirds of the salary of the superintendent of the gas works, \$1,760, this morning, didn't you? *A.* Take the electric light plant for the month of June, 1897, two-thirds of the salary of the superintendent will be \$1,480. One-half of that, \$740, will be found in salaries, and the rest in the distribution expense, including one-third of the superintendent's salary.

Q. In the \$2,640? *A.* In it will be found the other \$740.

Q. That is a total of \$2,220? *A.* \$2,220.

Q. That includes Mr. Winchester's salary? *A.* Of the electric light department.

Q. What is Mr. Winchester's salary? *A.* His salary on the books of the Company?

Q. What does he get? *A.* \$2,220.

Q. Is anything allowed by you for salaries in the general expense account of the electric light plant of that year? Which was Mr. Winchester's? Was it that \$2,220? *A.* The superintendent of the electric light station.

Q. Now, what other general salaries are there? *A.* There is a balance of \$1,864.

Q. What balance? *A.* Taking one-third of the superintendent's salary from distribution expense. Taking \$740 from \$2,604 leaves \$1,864.

Q. What does that represent? *A.* The electric portion of the salaries as distributed, as apportioned.

Q. Whose salaries? *A.* The general office salaries.

Q. The salaries paid Mr. Samuel Winchester, or other persons? *A.* General office man, book-keeper, and clerk.

Q. I wish to call the attention of the Commissioners to the returns for the year ending June 30, 1897, and particularly to items 15 and 16 on page 6, and to item 16 on page 8, being \$4,400 for general salaries for the gas department, and \$3,220 for general salaries in the electric light plant. I want the witness to state, if he can, how much he has allowed for corresponding items.

THE CHAIRMAN. Well now, let's have it, Mr. Witness. He has already stated it three or four times.

THE WITNESS. \$9,520.

By Mr. MATTHEWS.

Q. That is the total? *A.* That is the total.

Q. How much have you allowed? *A.* I told you, \$9,520.

Q. Now, will you pick those items out in your computation, the items aggregating \$9,520. That is all we want.

A. They are to be found in the electric department report

for June 1, 1897, under head of Salaries, \$1,480, distribution salaries, \$2,604. Gas department for the same year, manufacturing and labor, two-thirds of the salary of the superintendent, \$1,760, and the amount of distribution labor, including salaries and one-third of \$4,039.30. And there is \$363.30 in something else, which I can tell, if you want me to. I can give you details if you want them.

Q. Now, have you taken in the actual salaries paid to Mr. Fairbanks and Mr. Adams? Do they appear in your computation anywhere? They are employees under Mr. Snow at the gas works. *A.* That comes in the regular pay-roll, further shown as wages.

Q. Is there any item of wages? *A.* No, sir, manufacturing and labor. One minute, who is Mr. Fairbanks?

Mr. GREEN. Assistant superintendent.

THE WITNESS. That is in the manufacturing and labor. Everything appears in that except the superintendent's salary.

Q. Is anything allowed to Mr. William Winchester in your computation? *A.* The cashier? Yes, he comes in under the head of Officers' Salaries.

By *Mr. BROOKS.*

Q. That is on \$3,000 a year?

Mr. MATTHEWS. \$660. That goes under that.

THE WITNESS. It depends on the position he occupies.

By *Mr. MATTHEWS.*

Q. I do not understand what becomes of the \$1,500 and the \$800 that you have left out? *A.* It is an increase of \$800 which I have charged to the other company.

Q. That is, you have made a net deduction, taking the two plants together, of about \$800? *A.* Yes, sir.

Q. Was that because you thought the salaries were too high? *A.* I don't say that at all, because the salaries were paid for various duties.

Q. From what item in the returns did you pick out the \$800 which you deducted? *A.* It is in the \$1,500 item of Mr. Waters.

Q. You took that out entirely, I thought, a moment ago?

Mr. Brooks. Well, he can tell, just the same.

THE WITNESS. All salaries are entirely irrespective of those that are in the return. I cannot say where I have taken from one and put it into another.

Q. Instead of taking the salary that was charged up by the book itself, \$1,500, you have knocked out \$800. *A.* Taking the aggregate total, not by the Company in the books, but in the returns to Boston, the salaries charged up to those different departments show a difference of \$800.

Q. Do you know how Mr. Waters's salary was apportioned to the gas and electric light plants? *A.* I have nothing to do with that.

Q. You ignored that? Did you allow anything for the services of the treasurer of the Company? *A.* Well, as general office man.

Q. Have you allowed anything for salary of the treasurer in your account? *A.* The general office man ought to be treasurer, too.

Q. And collector? *A.* No. I have said the collector was \$660.

Q. You have not attempted to find out what the general salary paid by Mr. Waters in the Holyoke Water Power Company was? *A.* I may have found out what Mr. Waters's salary was, or may not. I don't see how that enters into the question, because I have told you how these salaries were apportioned, in the proportion of \$7,000 and \$3,000 and so on.

Q. Although the Company had put them in its sworn returns to the gas commissioners in Boston, you made no effort to find out what the salaries of those officers were? *A.* I would not say I made no such effort. I may have, and may have had some papers.

Q. But you did not take it into account in making up these figures? *A.* It was taken into account, all right. The total salaries paid here are to Mr. Waters, and Mr. Winchester, Mr. Stapleton, and another Mr. Winchester, and still another Mr. Winchester, and Mr. Snow, and Miss Cleary, footing up \$18,420.

Q. Those are the general salaries to the officers of the Company? *A.* No, to the parties mentioned.

Q. \$18,000 in all? *A.* \$18,420.

Q. Did you find out whether the Company paid a salary to the president, or the other general officers besides the treasurer? *A.* The treasurer is \$6,000.

Q. I said besides the treasurer. *A.* No, I think not. I think those were the only salaries that entered into the returns made to the Commissioners in Boston.

Q. Do you know whether the Company pays salaries to its president and other general officers, except the treasurer?

A. I presume it does. I hope it does.

Q. Did you make any examination to ascertain whether the Company paid any salaries to its general officers other than its treasurer? *A.* I think I did, as I remember.

Q. What was the result of that inquiry? *A.* Mind, I say I think. If I mistake not, the salary to the president is either nominal, or it did not enter into this matter at all, I don't remember which.

Q. Do you say you think the president gets no salary? *A.* He may be paid a nominal salary, or if it is a good-sized salary, it does not enter into this matter.

Q. Who has charge of the general office of the Company? *A.* I don't know; I have never seen him.

Q. Have you made any inquiries to ascertain? *A.* I did. As far as I remember, he was a lawyer down in Hartford.

Q. You have charged up no part of his salary, if there be one, to either the gas plant or electric plant? *A.* No, sir.

Q. Don't you understand that these items, \$4,400 to the gas works and \$2,220 to the electric works are supposed to include some of the salary paid to the president, if any? *A.* They are not so supposed. They do not include any such apportionment.

Q. And it is your system of book-keeping to entirely ignore the salary of the president of a big corporation, running a gas plant and an electric light plant? *A.* Not at all.

Q. What were the circumstances here why some of the salaries should not be charged up to this electric light plant or gas plant? A. I think you had better postpone this part of the thing, and tackle some one else who is better able to tell you in regard to that question than I am.

Q. Did you receive instructions from anybody to leave out in your computation the salary, if any, paid to the president of this corporation, or any other general officer? A. I received no such instructions at all.

Q. Why didn't you inquire whether the president was paid a salary?

Mr. BROOKS. He says he may have. He doesn't know whether he did or not.

THE CHAIRMAN. The question is asked you, Mr. Witness, why you didn't inquire about the president's salary?

THE WITNESS. I shall have to answer that the same as I did before. I think I did. Just what result it came to I don't remember.

THE CHAIRMAN. Any further questions, Mr. Matthews?

Mr. MATTHEWS. The witness, I think, is still answering the question.

Mr. BROOKS. I understood he answered that question.

Mr. MATTHEWS. If he did I was on something else —

Mr. GREEN. He answered it to the extent that he could not remember, but he went to looking up to find out whether he did or not.

Mr. GOULDING. I understand, Mr. Chairman, that the president was a lawyer in Connecticut. If anything was paid to him, I suppose it was for the production of gas, and would go into construction, wouldn't it?

Mr. BROOKS. No, I should think that would go into distribution.

Mr. MATTHEWS. If he was a lawyer and got a salary of ten thousand dollars more or less, he probably earned it.

Mr. BROOKS. I never knew a lawyer who got a salary of ten thousand dollars that earned it; did you?

Mr. MATTHEWS. It depends on where he earned it — whether in Boston or in Holyoke.

THE WITNESS. What is your question now, sir?

Mr. BROOKS. You answered the question. I don't know whether it was responsive or not.

Mr. MATTHEWS. I thought he was looking something up preliminary to answering.

THE CHAIRMAN. He practically asked him if he looked up the president's salary.

THE WITNESS. Yes, as I look over the vouchers now, I remember I did.

THE CHAIRMAN. State it.

THE WITNESS. The salary was \$5,000.

By Mr. MATTHEWS.

Q. What did you do with that? Did you include any part of it? A. I did not.

Q. Is that according to the practice of gas companies and electric light companies in your experience? A. It is when a man is not an active member.

Q. They don't charge the salary of the president to anything? A. If a man don't earn it. If he is away entirely he is not an active man.

Q. And you mean to say that you ignored the portion of the salary of a president of this corporation which would have been assigned to the gas plant if he had done any work, because he didn't do any work? A. It was ignored by other people, was it not?

Q. I am asking you. A. I did, and so did they.

Q. And you followed their example? A. It was not necessarily following their example. He told me he was not an active man; he didn't have anything to do with those two departments.

Q. When they left anything out, then you were not acute to see whether it should have been inserted by them? A. I will show you several times where I have inserted items.

Q. You did not in this case? A. Possibly not in this case.

Q. You left his salary out because he did not do anything about this Company's business? A. I don't know — he was

not an active man, and had nothing to do with the gas or electric light plants.

Q. Then you assigned the whole of his salary to the water power plant? *A.* Under the circumstances, possibly, yes.

Q. Or would you assign it to capital? *A.* If you are going into those hypothetical questions —

Q. His salary has got to be assigned somewhere? *A.* Yes.

Q. Where should it be assigned, in whole or in part? *A.* To general purposes.

Q. And you ought not to apportion, in your opinion, any of those expenses to the gas plant or the electric light plant? *A.* I don't see how I can answer that question any further than I have answered.

Q. Now going on to another matter; you have entered up \$85.96 as paid for damages in the year ending June 30, 1897, in connection with the gas plant? *A.* Yes.

Q. That is, damages in actions at law or claims for liability on account of accident, I suppose? *A.* That is what it is.

Q. That was the actual amount paid? *A.* That was the actual amount.

Q. Did you make any allowance or charge for suits pending then? *A.* For suits pending?

Q. Yes, if there were any? *A.* No, sir.

Q. Did you inquire whether there were any suits pending then? *A.* Suits of what nature?

Q. Suits for damages against the Company for accidents occurring in or about the gas works? *A.* I don't know that I did.

Q. It is customary, isn't it, in gas companies and electric light companies, to set aside a certain amount each year to cover their possible contingent liability in such matters or to insure, isn't it? *A.* For self-insurance?

Q. If they don't insure in a company, they set aside, as a rule, some portion of their income each year to meet such contingent claims? *A.* I suppose it has been done. I don't know whether it is a regular thing to do.

Q. You did not do it in this case? *A.* No.

Q. You only took the actual amount they paid that year, \$85.96? *A.* Only that amount as damages.

Q. And you did not inquire into the number of suits that were then pending? *A.* I don't know of any such suits pending.

Q. Now, I notice an item of \$142.30 for corporation tax paid by this Company on account of its gas plant. Did you make any inquiry as to how that was apportioned? *A.* As to how it was apportioned?

Mr. BROOKS. Perhaps you had better refer to your voucher.

Q. Where did you get the item of \$142.30 as having been paid by the Company during the year ending June 30, 1897, for the corporation tax in respect of its gas works? *A.* That was very fully looked into; valuations were given and the rates charged. For the year ending June 1, 1897, the gas portion was \$1,676.24.

Q. That is the local tax, Mr. Foster? *A.* Yes, sir.

Q. I am talking of the corporation tax of \$142.30. The other item is assessed locally. The \$142.30 is a part of the Company's corporation tax, and I wanted to know how you got that figure. *A.* I shall have to refer to the vouchers before I answer that question.

Mr. BROOKS. Well, refer to them if you desire. I don't know but we shall have to take these vouchers up and go through with them for a week or two.

A. (After examining books and papers.) The total corporation tax was \$2,735.66 of the Holyoke Water Power Company. That is found in voucher No. 92, November, 1896. That was the total tax. Now, in order to arrive at the portion charged to the gas works, I take the proportion of the gas valuation to the total valuation, and arrive at it in that manner.

Q. You mean the valuation of the gas plant? *A.* The valuation of the gas plant.

Q. Made by whom? *A.* I think from the town authorities.

Q. From what? A. From the town authorities. I think I got that from Mr. Stapleton, who got that from the town authorities, all subdivided out.

Q. What figure did you take then? Can you repeat the calculation or show how you made it? A. I have got two valuations down here as the total valuations. I cannot tell which it is without figuring it out.

Mr. BROOKS. Well, figure it out.

(The witness proceeded to make a computation.)

THE CHAIRMAN. Really, it seems to me this examination could go on more rapidly than this. Witnesses are not called upon generally to figure while upon the stand, and there must be some method by which this examination could be shortened. If it is going to continue in this way we would like to know it.

Mr. BROOKS. Why, your Honors, could not their expert — I understand they have one or more here — go over these various vouchers which we have picked out, and the entries, with Mr. Foster to-morrow?

Mr. MATTHEWS. That is what we would like to do, Mr. Brooks, if agreeable to you.

Mr. BROOKS. If you can do that, it seems to me —

Mr. MATTHEWS. It would save time. Of course, it was impossible for us to tell how long it would take for the witness to pick these matters out.

THE CHAIRMAN. I am not finding fault with either you or the witness, but if there is any way we can move more rapidly we should like to do so. If your experts can see him to-morrow —

Mr. BROOKS. (To the witness.) Are you ready to answer that question?

THE WITNESS. No, I am not.

Mr. MATTHEWS. Suppose you leave that, then, till to-morrow, Mr. Foster?

THE WITNESS. All right.

Mr. MATTHEWS. We will pass that question until Mr. Foster and our experts have an opportunity to figure that up to-morrow.

THE CHAIRMAN. Very well.

Mr. BROOKS. Is there anything more you want to ask him?

Mr. MATTHEWS. Yes.

At the suggestion of the Chairman the examination was suspended at this point, and after conference with counsel the Commissioners announced that the hearing would be resumed in the same place on Monday next, and that the Commissioners would reserve the whole of next week and the week succeeding for the case. The Chairman stated that Mr. Turner had another engagement for a part of week after next, but if the parties were willing the hearing would proceed with two Commissioners present, and Mr. Turner would subsequently read the testimony introduced in his absence. This matter was left open for further consideration.

Adjourned at 4.20 P.M. to Monday, April 10, 1899, at 9.30 A.M.

FOURTH HEARING.

HOLYOKE, MASS., Monday, April 10, 1899.

The Commissioners met at the office of the Holyoke Water Power Company at 9.30.

WILLIAM H. FOSTER, *cross-examination resumed.*

By Mr. MATTHEWS.

Q. Mr. Foster, you spent the greater part of Saturday with Mr. Robb, representing the City, going over your figures, did you not? A. I did.

Q. Will you now answer the question that was pending at adjournment on Friday, respecting the valuation of the gas and electric light plant, upon which the corporation tax was struck? A. The valuation of the gas plant for the year 1897 was \$102,210.

By Mr. GOULDING.

Q. What are you now giving?

Mr. BROOKS. He says valuation. Valuation by whom?

THE WITNESS. The assessors' valuation.

Mr. GOULDING. I will raise the question whether that is competent evidence.

THE CHAIRMAN. We do not treat that as valuation. The assessment valuation we do not treat as evidence, I mean.

Mr. GOULDING. That in itself is not competent evidence.

Mr. MATTHEWS. We do not offer it as such.

THE WITNESS. Assessors' valuation for the year ending June 1, 1897, was \$102,210. The total local valuation was \$1,964,929, making the valuation of the gas plant 5.202 per cent. of the total valuation. The total corporation tax paid for that year was \$2,735.66. Taking 5.202 per cent. makes the corporation tax \$142.30.

By Mr. MATTHEWS.

Q. What was the State valuation in addition to the assess-

ors' valuation for the Holyoke Water Power Company that year? *A.* \$181,170.

Q. That makes the total valuation what, local and State? *A.* \$2,146,099.

Q. How did you get at the amount of corporation tax to be apportioned to the electric light plant that year? *A.* In the same manner, putting the valuation of the electric light plant at \$170,000.

Q. That being the assessors' valuation for the year? *A.* Yes, making a total valuation of \$2,762,590.

Q. That is 1898? *A.* But the same total.

Q. That is 08652 per cent., isn't it, about? *A.* Just exactly the same amount.

Q. Now will you give the figures for 1898? *A.* The total local valuation, \$2,762,590.

Q. The State valuation how much? *A.* \$179,350.

Q. Total? *A.* \$2,941,940. The gas portion was \$201,850.

Q. And the electric light portion? *A.* The electric light portion was the same as the preceding year, \$170,000.

Q. And you arrived at the same amount of the corporation tax, that year, by percentage, in the same manner as you did the year before? *A.* The same as the year before.

Q. What was it that year? *A.* \$2,736.88.

Q. Did you find any items in the Company's books for either of these years, representing expenditures for legal services? *A.* No, sir.

Q. Have you taken any account of legal expenses in your computation of expenditures? *A.* I have not.

Q. For either the gas or electric light plant? *A.* No, sir.

Q. Did you find any entry in the Company's books for either of the years in question for engineering services, with respect to either plant? *A.* I am unable to answer that question. I do not know whether the superintendents and the various officers are engineers or not.

Q. You find no expenditure for engineering services other than the salaries charged by the respective superintendents of the plants? *A.* Or officers.

Q. Or officers. In regard to directors' allowances, do you find any charge for them in the books?

Mr. BROOKS. I don't understand what you mean.

Q. Fees for attendance at meetings. A. I don't remember that. I don't remember whether there was any there or not, unless I look the vouchers all over.

Q. What expenditures did you find the Company carrying for insurance of the gas and electric light?

Mr. BROOKS. I suppose this is not to be considered evidence at all on the question of valuation.

THE WITNESS. I have not the figures of the total insurance. We did not take them.

Mr. BROOKS. You can find them readily.

Q. You have got the amounts of the policies. A. I did not take the amounts of the policies. I took the rebates, and so forth, but not the total amount of insurance, the face of the policies.

Mr. BROOKS. Can you refer to something?

THE WITNESS. I could refer to the vouchers that we looked up yesterday.

Mr. BROOKS. You had better refer to them if he is asking for the face of the policies.

THE WITNESS. I know it is right, on the Company's books. Total, \$45,000, $1\frac{1}{4}$ per cent. premium.

By Mr. MATTHEWS.

Q. That was insurance on the works? A. Yes, sir.

Q. On the electric light plant what was the insurance carried, and the rate? A. Well, there must be added to that boiler insurance. There is some boiler insurance.

Mr. BROOKS. You had better get your vouchers and state accurately.

Q. Was there any boiler insurance in addition to the \$45,000? A. Those policies can be got in very soon.

Mr. BROOKS. Get the policies for 1897 and 1898.

Q. What insurance was carried on the electric light plant? A. I can get them very soon.

Q. Did you include anything in your expenditures on

account of the gas plant for water power? *A.* I think not. No, sir.

Q. Did you find items in the Company's books representing expenditures for gas stoves, ranges, and so forth? *A.* Very few, if any.

Q. What did you charge those items to, construction or operating expenses? *A.* Part of it went in as a miscellaneous item, but I think the total thing was only \$100. It was not figured in the construction account at all.

Q. I will call your attention to an entry in the return to the gas commission, for the year ending June 30, 1897, on page 6, item 11, gas stoves, fixtures, repairs and renewals, \$7,149.98. *A.* 1897, gas?

Q. Yes. *A.* I don't know. The total gas stove business for the year was under \$40.

Q. Does that represent payment for stoves, cost of stoves? *A.* The cost of stoves went in as an operating expense.

Q. You don't know what you did with the items representing the rest of that \$7,149, do you? *A.* That \$7,000 is the recapitulation of those three amounts above. There is no trouble about that at all.

Mr. BROOKS. (To Mr. Matthews.) Will you allow me to interrupt you a moment? Is that \$7,149.98 that you refer to, the footing? You see there is nothing for gas stoves or fixtures?

Mr. GOULDING. The witness has just called his attention to that.

Q. In this copy it is against gas stoves. Then there were no special items one way or another for gas stoves? *A.* No, sir; very small.

Q. Now will you give us the insurance policies? *A.* The electric light insurance was \$75,000.

Q. That was on the station plant? *A.* On the electric station, dynamo room, engine room, boiler room, and wheel house. All the same amount, those three policies. That will stand for the \$75,000, three policies \$25,000 each.

Q. Now will you let us know about the boiler insurance?

By Mr. BROOKS.

Q. Did you give us the gas? A. \$45,000.

Q. You did not state what part of the plant it was on, or how much it covered. I do not believe it is of any great consequence. A. It is in some twelve or fifteen different policies. If you want I can get them all out.

By Mr. MATTHEWS.

Q. Can you give us the total amount? A. I did give you the total amount, \$45,000.

Q. Well, the boiler insurance? A. \$10,000 boiler insurance in the gas company, \$12,500 in the electric light station.

Q. What are the premiums paid on those? A. \$100 in the gas, \$125 on the electric light.

Q. And the premiums, were they all included in your computation of expenditures? A. I believe the boiler insurance was not in.

Q. And, therefore, to your statement of expenditures there should be added the amount of boiler insurance? A. There should be added about \$100.

Q. For each plant? A. No, total.

Q. What for each? A. \$33.33 for the gas plant, and \$41.67 for the electric light.

Q. For each year? A. For each year.

Q. Now in regard to the liability insurance, what did you find? A. Liability insurance is based on the total of the pay-rolls.

By Mr. BROOKS.

Q. Of the entire Company? A. The entire Company, and the policy covers also the gas and the water power company.

Q. Also the electric light? A. No, that is entirely different.

By Mr. MATTHEWS.

Q. What is the premium on the pay-roll?

Mr. BROOKS. Refer to your policies if you want to.

THE WITNESS. The premium on the whole thing was

\$125. That premium is subject to adjustment, according as the pay-roll would be over or under the estimated amount on which the premium is based.

Q. What is the rate? *A.* \$125 on the total pay-roll of about \$25,000.

Q. What is the percentage? *A.* I don't think it is here.

Q. That policy you have been reading about refers to some place in the water power and gas works? *A.* Gas works and hydraulic department.

Q. And it is not included in the electric light department?
A. It is not.

Q. Does that include public liability or only the liability to employees?

Mr. BROOKS. I guess it is only liability to employees, Mr. Matthews.

Mr. MATTHEWS. That is admitted?

Mr. BROOKS. I think so.

Mr. MATTHEWS. That is, it is admitted that the liability covers employer's risk and not the public risks?

Mr. BROOKS. You can look to see. They don't insure, I think, against the public.

Mr. MATTHEWS. Some do and some do not.

Q. I will put the question this way, Mr. Foster: did you find any entry in the Company's books for premiums upon liability insurance protecting the Company against public liability in respect to its gas plant? *A.* What do you mean by public liability?

Q. Liability to the public at large as distinguished from liability to the Company's employees? *A.* I don't know what the policy reads. It is liability insurance, and I presume it is only on employees of the Company.

Mr. MATTHEWS. I see that the policy would seem to be limited. I am very certain, Mr. Brooks, that it is not a public insurance.

Q. Were all the policies relating to liability insurance of the same kind, as you remember? *A.* I believe they were.

Q. That is, you did not find any policies taken out by the

Company covering accidents to the public at large as distinguished from accidents to their own employees? *A.* I do not remember of any.

Q. Now did the Company insure against accident to its employees, arising about the gas works, in both years that you examined into? *A.* Both years in the gas; the first year, 1897, only in the electric light.

Q. For the year 1898 there was no liability insurance in regard to the electric light works? *A.* None.

Q. What was the amount carried in 1897 by the electric light works, the amount and rate, and whether or not those policies covered public risks or only accidents to employees?

A. In the electric department the total liability on one accident was \$10,000, and total liability to one person \$5,000.

Q. Is that insurance confined to employees? *A.* I presume it is. I haven't read it through.

Q. Let me see it. It appears to be confined to employees. *A.* It is headed "Employer's Liability Policy."

Q. You did not find any policy taken up by the Company in either year covering the public risk in respect to the electric light plant? *A.* Not that I remember of.

Q. What was the premium paid for the liability policy in 1897, or the rate of premium? *A.* \$200.

Q. What percentage of the pay-roll was that? *A.* On \$10,000.

Q. Two per cent. on the pay-roll? *A.* Yes. That is subject to adjustments for variations in the pay-roll.

Q. Does this policy cover accidents outside of the works, or only in and about the works? *A.* No, it is not confined to the works.

By Mr. BROOKS.

Q. To what works? *A.* Not confined to the electric light works.

By Mr. MATTHEWS.

Q. That is, it covers accidents on the lines as well as in the plant,— as well as at the station, I should have said? *A.* Yes. It covers the men on the line work.

Q. Will you state again the amount that you allowed for water and coal, that were consumed on the electric light plant in the year 1897? I think your statement was \$139.99. *A.* The electric light department in 1897?

Q. Yes. *A.* Yes.

Q. How was that divided up between coal and water? *A.* I am unable to state now, because the vouchers are all run in together. It was city water, and it was very small.

Q. That was the water consumed in feeding the boilers? *A.* I presume so.

Q. Do you know what the Company paid for coal per ton that year? *A.* I can tell you by referring to the vouchers.

Q. I will call your attention to page 35 of the returns of the gas company to the Commission for the year ending June 30, 1897, the statements contained on that page, that the electric plant, that there were used at the electric plant during the year 111 tons of coal, at an average cost of \$4.30. *A.* Well.

Q. That would make \$477.30 for coal consumed that year? *A.* Something about that amount.

Q. How do you account for the difference between that and what you stated before, \$139.99, which were your figures for coal and water both? *A.* I account for that very easily. I account for it by the adjustment of the inventory.

Q. Well, will you explain that? *A.* One thing in regard to that amount in that report, it was probably put in for coal purchased at one period, which was \$184.50, and at another, which was \$524.60, leaving a difference of \$340.10 to be adjusted in the inventory.

Q. I will call your attention again to page 35 of the returns, wherein the Company's officers state that they received during the year 103 tons, and used 111. Where in your statement of expenditures does the cost of these 111 tons appear? *A.* I am sure I don't know where it appears. I took the amount paid for coal during that period, and I made an adjustment according to the inventories that were furnished by the Company. I deducted that from the total amount of coal paid for.

Q. Didn't you use the analysis of coal consumption furnished by the Company's officers to the gas commission, showing the consumption of 111 tons that year? *A.* I don't know. As I stated before, the Company's business is conducted on a cash basis.

Q. But this statement of 111 tons refers to coal consumed during the year, doesn't it? *A.* Apparently it does there.

Q. How much coal did they consume during the year, according to your figures? *A.* The difference between what they bought, and the coal they had on hand. The only inventories available for this purpose are taken by the Company on September 30 of each year.

Q. You had this inventory, so called, page 25 of the returns to the Commission, made out and sworn to. You might have used that? *A.* I had the inventories furnished me by the Company.

Q. By whom? *A.* I am not able to state the exact man.

Q. Mr. Snow? *A.* He certainly had nothing to do with the electric light department.

Q. Mr. Winchester, I should say. *A.* Mr. Winchester or some person in the department.

Q. You had a copy of these returns to the gas commission, didn't you? *A.* They were here.

Q. And the result of it all is, whereas they returned a report showing that they were using 111 tons of coal at an average cost of \$4.30, you only put down as expenditure for coal and water both \$139.99? *A.* I don't know whether they paid so much for coal, or had it given to them.

Q. How much coal would have been consumed during the year on the basis of \$139.99 for both? *A.* You can take the next period, which was four hundred and thirty odd dollars. I should judge they had the coal paid for in that period.

Q. You made up the apparent deficit of this year by charging it to the next year? *A.* If the inventories warranted it, I did.

Q. Then the coal consumption does not appear in your item of coal and water, but appears in the inventory? Is that

right? *A.* These inventory adjustments,— you notice on that report that inventory adjustments are made by the Company.

Q. What have you got for coal and water for the year ending June 30, 1898? *A.* \$843.47.

Q. For coal and water. Can you divide that up between coal and water? *A.* I can by finding the vouchers. I haven't got them split up here. Well, as I said before, the majority of that would be in the decrease in the inventory showing that they had used more coal than they paid for.

Q. Then when you stated here in your itemized list of expenditures for the year so much for coal and water, the total expenditure for coal, for instance, would not necessarily be shown in that item, but might be covered up in the inventory? *A.* I will answer it by saying, you cannot make up a statement of that kind without including the inventory. They had more on hand at the end of the year than they did at the beginning, showing they didn't use it.

Q. You didn't take in account, then, all the coal, the number of tons of coal consumed in the electric light plant, according to the Company's returns in either year? *A.* I took the coal that the Company bought, and made an inventory adjustment. The business was conducted on a cash basis.

Q. Then if I understand you correctly, the expenditure for coal would appear in the inventory adjustments in your statements, but not alone in the itemized coal and water? *A.* The adjustments are made in that coal and water account.

Q. Then for the two years, you should add the \$139.99 to the \$843.35, and you would then get the total coal and water consumption for the two years. Is that right? *A.* For those two years the amounts paid for coal and water I have increased \$96.50. The inventory showed at the end of that period less than they had to start with, showing that the coal was used.

Q. When you make up your accounts of the cost of operating an electric light plant, and put down \$139.99 as expenditure for coal and water, during only the other calendar year, that does not represent the whole expense for that purpose, then? *A.* It should.

Q. Well, does it? And, if it does, how many tons of coal did they consume that year? *A.* I want to call your attention again to the fact that these reports are made up on June 1, while the only inventories of the Company available are made September 1.

Q. Then your accounts may differ from the returns of the company to the gas commission by reason of the different periods taken? *A.* Different periods taken.

Q. And your account, then, would not necessarily be exact for the period covered by the returns to the gas commission? *A.* Subject to adjustment from June to September.

Q. So that, if I understand you correctly, then, in respect to everything that is embraced in the inventory accounts, your system of accounting includes the year from September to September? *A.* From September to September.

Q. And not the year from June to June; is that right? *A.* That is correct. The same inventory is figured in the reports that I based mine on,—the returns.

Q. Now, passing to the returns for the year 1899, I call your attention to page 37, where the consumption of coal during the year is given as 78 tons at \$4.05, making a total of \$315.90 for coal consumed that year. Now I will ask you where that appears in your statement? *A.* \$843.37.

Q. It is in that? *A.* It is in that. I have increased it because the inventory shows that they had less on hand at the end than they had at the beginning.

Q. Then you have gone by inventories entirely for stock on hand at the different periods? *A.* There is no other way of making up a statement.

Q. You do not consider that the sworn statement of the officers of the company that they actually used 78 tons in the twelve months is what you should go by? *A.* I told you before that these statements were made up on cash transactions subject to corrections by the inventory.

By Mr. BROOKS.

Q. You mean the returns? *A.* The returns.

By Mr. MATTHEWS.

Q. Let me ask you if you have ever had any experience in

keeping or making up the accounts of gas or electric light companies in Massachusetts? *A.* I do not know that I have, outside of this concern.

Q. I call your attention to the general salary account of the Company, as shown in the disbursement book marked D, showing a monthly pay-roll, on account of general salaries, of some \$2,660. Will you state what those salaries amount to per annum? *A.* They amount to \$29,600 for the year 1897. The year 1898 they amount to \$27,099.96.

Q. Please give the items; that is, the different salaries.

<i>A.</i>	President	\$5,000.00
	Treasurer and Hydraulic Engineer . .	6,000.00
	Cashier	3,360.00
	Paymaster	2,040.00
	Collector	1,500.00
	Land Agent	2,700.00
	Civil Engineer	1,920.00
	Superintendent of Mills	2,220.00
	" " Gas	2,640.00
	" " Electric Light	2,220.00
	Making a total of	<u>\$29,600.00</u>

Q. That is for the year 1897, is it? *A.* The year ending in 1897.

Q. Do you find any salary paid to general counsel or any salaried attorney? *A.* Yes, there is a total salary list for the year.

Q. Did you find in any part of the Company's books any reference to counsel or attorneys employed on an annual salary?

A. I don't know of any.

Q. Did you find any record of suits against the Company?

A. Not that I know of.

Q. Or of claims for accidents? *A.* Such as stated.

Q. What do you mean by that? *A.* I have reported some small amounts.

Mr. BROOKS. He has it in his reports, you know,—two small amounts.

Q. You have got an amount of \$85 for claims, haven't you?
A. Damages.

Q. Do you find any distinct record of the number of claims preferred or suits brought against the Company for accidents occurring in or about either the gas works or the electric light works? *A.* What is that, past or future?

THE CHAIRMAN. During these years, probably.

Q. During these years, I mean. *A.* I do not.

Q. I understood you to say Friday that you went through the different vouchers or bills representing the expenditures of the Company in respect of its gas and its electric light plants, and apportioned yourself the items between construction and annual expense? *A.* Aided by the advice of the various superintendents as to where the articles purchased were used.

Q. For instance, when you came across an item for gas pipe, you relied on Mr. Snow to tell you whether there was a renewal or an extension of the Company's mains? *A.* I did.

Q. And when you came across an item for freight or carting for gas supplies or electric light supplies, you relied on the statement of Mr. Snow or Mr. Winchester for similar information? *A.* For the uses to which that was put.

Q. And you had no time and made no effort, I suppose, to verify their statements? *A.* That would be verified by engineers.

Q. What? *A.* That, of course, would be verified by engineers.

Q. As you took up each voucher you asked the superintendent of the gas works or the electric plant, as the case might be, where that material went, and what it was used for? *A.* Yes.

Q. And you relied upon his statement? *A.* Yes.

Q. Without further investigation of your own? *A.* Certainly.

Q. And acting upon that information, and upon your own knowledge or opinion, you made the apportionment between expense and construction? *A.* I did.

Q. And that process, I suppose, was adopted by you throughout this entire computation? *A.* It was.

Q. My attention is called to the fact that on Friday you said that the general salaries paid, if you remembered correctly,

were \$18,000. Do you remember making such a statement?
A. I didn't make such a statement as that at all.

Mr. GREEN. \$18,420.

THE WITNESS. What?

Mr. GREEN. \$18,420 is what you said.

THE WITNESS. I made no such statement as that at all, for I know it was not right.

Q. Now one further question in regard to this apportionment which you made between construction and expense. You used the information available and you used your best judgment in making this apportionment? *A.* Yes.

Q. With that end in view, that nothing should be charged to construction that ought to have gone to expense and nothing should be charged to expense that was properly a matter of construction? *A.* That is right.

Q. And then are we to understand that in the account that you have made up for each of these two years for each of these two plants, showing the annual expenditures for the operation and maintenance of the works, you have included no item which ought to be charged to construction? *A.* To the best of my knowledge, no, with the exception—I will qualify that, as I believe there was a small item of \$30 as found the other day by your man, which I acknowledged slipped in inadvertently.

Q. That is, you and Mr. Robb discovered that you had made a slight error of \$30 in one item? *A.* Yes, sir.

Q. Which was that? Which plant? Which year? *A.* I don't remember now.

Q. That ought to have been charged to expense and was charged to construction? *A.* Yes.

Q. That is, it had been charged in your account to construction, and you ought to have charged it to expense? *A.* I should.

Q. Do you remember any other error of that sort that you and Mr. Robb found on Saturday last? *A.* I don't remember any, no.

Q. Are there not one or two more small items? *A.* Small sums of one or two dollars. Nothing very much.

By *Mr. BROOKS.*

Q. Well, how much? *A.* Oh, very small. I don't remember how much.

Q. I understood you to state the amount, and I did not get it. *A.* Very small amounts.

Mr. MATTHEWS. That is all, Mr. Brooks.

Re-direct.

By Mr. BROOKS.

Q. Did you find any items that you had charged into expense that you should not have charged into expense? *A.* On account of conducting the Company's business on a cash basis, yes.

Q. Well, the items found that should not have been charged into expense were substantially how much? *A.* Well, there was one amount of \$150 for insurance for the year —

Mr. MATTHEWS. You mean items, Mr. Brooks, that were included in his account as charged to expense —

THE WITNESS. Charged to expense, my account.

Mr. BROOKS. (To witness.) Your account I am talking about.

Mr. MATTHEWS. His first account.

Q. That is, you charged into expense \$150 too much for insurance? *A.* Too much for insurance.

Q. In what way did you charge it in too much? *A.* The Company that year paid \$600 for the insurance, policies of which have been shown. They received as rebates \$525. The actual cash paid out for insurance in that period of the Company was only \$75.

Q. And you have it in your statement? *A.* \$225.

By Mr. MATTHEWS.

Q. Fire or liability? *A.* That was fire.

By Mr. BROOKS.

Q. Fire insurance; and on which plant was that? *A.* That was on the electric.

Mr. MATTHEWS. Did he state the year?

Mr. BROOKS. Yes; 1897, I understand.

THE WITNESS. 1897.

Q. Any others? *A.* I don't know any at present.

Q. You say that there was one item of — You and Mr.

Robb went over these various vouchers and your statement, did you? *A.* Yes.

Q. And you found two or three mistakes? *A.* Yes.

Q. You found one of something like \$30? *A.* Yes.

Q. That you had charged into construction that should go to expense? *A.* I did.

Q. And then you say you found one or two other items? *A.* Yes.

Q. How much in amount? *A.* As I recollect it, I do not think it would amount to \$10.

Q. Do you remember in which years those were? *A.* The year ending June 1, 1897.

Q. You were informed by Mr. Snow and Mr. Winchester — if there was not any statement on the books or in the vouchers where certain material went to, you found out from them whether it went into repairs or extensions? *A.* Where the pipe was used, and then I charged it to the expense or plant account.

Q. You, I understand you to say, also consulted with two or three gentlemen with reference to the apportionment, one of whom was Mr. Humphreys? *A.* He is the man who employed me; I always refer to him, and go over the work with him, and tell him what I have done and why.

Q. And you advised with him with reference to that? *A.* I did.

Q. And with anybody else? *A.* With Mr. Peter Wright.

Q. And with anybody else? *A.* I stated Mr. Randolph. By Mr. MATTHEWS.

Q. Who is Mr. Peter Wright? *A.* I consulted with Mr. Peter Wright in regard to the electric part of the plant.

Q. Who is he? *A.* He is Mr. Humphreys' electrical expert.

By Mr. BROOKS.

Q. There was a question asked you on Friday with reference to certain books, one of which, I think, was kept by Mr. Snow, and the other one was kept, perhaps, by Mr. Winchester. What were those books? *A.* I believe those were books in which the memorandums were made up from which were compiled the returns to the State Commissioners.

Q. And there were two books shown you which I understand you to say were memorandum books from which some compilation was made for the return to the State Commissioners? A. There were.

Q. Were they anything more than memorandum books? A. Nothing at all.

Q. And did either of these books contain any analysis? A. Yes, to a certain extent.

Q. You made no examination, as I understood you on Friday, of the returns to the Commissioners except with reference to the totals? A. I don't understand exactly what you mean by that.

Q. There were two returns that your attention was called to, one of 1897 and one of 1898, that were made by the Hol-yoke Water Power Company to the gas commissioners? A. Yes.

Q. Did you make any special examination of those returns? THE CHAIRMAN. He said he did not on Friday.

Mr. BROOKS. I think he said so.

A. Well, I simply used them in showing the difference between my compilation and theirs.

Q. The various vouchers you can identify here? A. Yes.

Q. And you have, I think, identified? A. Some of them.

Q. You have shown them to Mr. Robb? A. Yes.

Q. And you have gone over them with him? A. Yes.

Q. The expert on the other side?

Mr. MATTHEWS. Only for one year, were they?

Mr. BROOKS. Two, I think, 1897 and 1898.

Q. For the year 1897? A. Yes.

Q. You were asked the difference between repairs and renewals. What do you say is the difference between repairs and renewals? A. Well, a certain portion of the machine would break; a nut would break. As a new nut would be put in I would call it a repair to the machine. Current renewals — if a whole machine should give out I would call it a renewal.

Q. You were inquired of with reference to the arrangement of salaries toward the last of Friday afternoon. I would like to have you explain to the Commission just the method that you

pursued in arranging the various salaries. *A.* The salaries, as I found them, were apportioned on the sub-books, not on the Company's books, and about \$7,000 to the gas and \$3,000 to the electric light. The apportionment seemed entirely inadequate, and it was re-arranged after consultation with Mr. Humphreys, who has charge and owns a good many gas plants; and the total amount which I charged for salaries amounted to \$9,520, which was more than one-third of the total salaries for all the departments of the Holyoke Water Power Company.

Q. And whether or not upon your investigation you found the business of the entire department was very largely in excess of the two-thirds? *A.* Very much so.

Q. A great many times in advance of the two-thirds? *A.* Considerably in advance of it.

Q. And as I understand you, you left the pay-roll of the gas and the electric plants just the same in your figuring and in your statement that it was upon the Company's books? *A.* The pay-roll was taken entirely.

Q. Is there anything in the books of the Company to show the cost of the electric light plant? *A.* Do you mean any account?

Q. Anything that shows the actual cost of the electric plant? *A.* No, sir.

Q. Of the gas plant? *A.* There is not.

Mr. MATTHEWS. Do you mean to refer to the electric plant or gas plant?

Mr. BROOKS. The gas plant.

Q. And whether or not the profits of the gas and the electric plants represent one-third of the entire profits of the Holyoke Water Power Company? *A.* Represent what?

Q. Whether or not the profits of the gas and electric plant represent one-third of the profits of the entire Holyoke Water Power Company? *A.* They do not.

Q. Or anywhere near it? *A.* No.

Q. Will you pick us out and show to the Commission two or three of the vouchers of the gas and electric plants as samples of the vouchers that you were called to pass upon in your re-arrangement? (The witness produced certain vouchers).

Q. Take first a gas voucher. *A.* 728, June, 1896.

Q. No. 728? *A.* No. 728, June, 1896. It is a bill of the Holyoke Felting Works for covering two Manning boilers, amounting to \$110.

Q. And where in your statement did you place that? *A.* I put two-thirds of it to construction account.

Q. Why? *A.* That covering was on two boilers of 125 horse power each, which replaced one 30 horse power, making a total horse power of 250 replacing a 30 horse power. I have charged one-third of that as expense and repairs.

Q. Take another voucher. Was that an electric voucher or gas voucher? *A.* That was gas.

Q. Take another one. What was the number of this one? *A.* Voucher 802, Isbell Porter Company, bill of \$572 for exhauster connections. It is for connecting two exhausters where they only had one before. I put half of it in repairs and renewals, or expense account.

THE CHAIRMAN. Well, he depended, of course, for his information with reference to such a thing as that, upon what was told him by Mr. Snow and somebody else.

MR. BROOKS. I assume so.

MR. GOULDING. The voucher shows it.

THE WITNESS. The voucher shows it.

Q. The voucher shows it, does it? *A.* The voucher shows that it was for those exhauster connections.

THE CHAIRMAN. Wherever the voucher shows, it will speak for itself.

Q. Take another one.

MR. MATTHEWS. I do not understand the voucher shows whether it was new work or old work.

THE WITNESS. No, it does not.

MR. GOULDING. It shows what it is.

THE WITNESS. It shows it was for making two exhauster connections.

By MR. MATTHEWS.

Q. You apportioned it? *A.* I apportioned half of it to expense and half to construction.

THE CHAIRMAN. I should think the practical way out of it,

except where there were controverted questions, would be to have the men who had the purchase or distribution of these things called.

Mr. BROOKS. I purpose to do that, but I thought you would like to know something of the system he pursued.

THE CHAIRMAN. Certainly.

Mr. BROOKS. Of course I do not want to be wearisome.

THE CHAIRMAN. Not a bit of it. Go on in your own way.

By Mr. BROOKS.

Q. Take another one. I think I will not trouble you with more than three. Take another voucher. A. Voucher No. 824, July, 1896; the bill of the Holyoke Steam Boiler and Iron Works (Coghlan's). It is a bill for putting up a smoke-stack (this smoke-stack was a three-foot stack made of boiler iron, with iron beam supports and all that sort of business) and making connections to the boilers. That amounted to \$325. There was previously there only a 16-inch galvanized iron pipe. I have apportioned that, making allowance for the former pipe; charged \$275 to construction for the new, not the whole of it.

Q. That is, you put \$50 of it to expense, and the remainder to construction? A. The remainder to construction.

Q. With reference to the coal, I do not know that there is an understanding about that. I do not know whether there is a misunderstanding with reference to it. You gave the coal bill—the coal and water together—in 1897 as— A. About \$139.

Q. \$139.99, I think. A. That is right.

Q. That was for 1897? A. Yes.

Q. Then your coal bill for 1898 is \$840? A. \$843.

Mr. MATTHEWS. Coal and water.

Mr. BROOKS. Coal and water.

THE WITNESS. The water is a very small quantity.

Q. What part of either of these is water? A. A very small part. I am not able to state without dissecting the account.

Q. Very well. Now you took the coal—do I understand it that you took the coal that was actually used in 1897? A. The coal that was bought plus coal that was used, which would, of course, show in the inventory.

Q. How much was bought in 1896 you do not know? *A.* I do not know anything about it.

Q. That is previous to your year? *A.* Yes.

Q. Then how did you come to enlarge your figures in 1898?

A. Simply because they had more coal on hand at the beginning of the year than they had at the end, showing they must have used it. The Company has made its own inventory adjustments on the same inventory that I have taken, as will be found in the returns.

Q. They returned to the gas commissioners for the coal used for 1898, on page 37, seventy-eight tons. And you give them in your statement—you debit the plant with \$840 and some odd? *A.* Yes, sir.

Q. That is the coal that was actually on hand plus what they had used; was that it? *A.* Well, it was the coal that they had bought, plus coal which they must have used, as they did not have it on hand at the end of the year, whereas they did have it on hand at the beginning of the year.

Q. Is it fair to say that you arrived at your figures by taking the coal that they had on hand at the beginning, and subtracting the coal that they had on hand at the end from that sum? *A.* Yes, taking in consideration the coal they purchased during the period.

Q. And you went over all the vouchers with reference to the coal? *A.* All the vouchers; yes, sir.

Q. And the water? *A.* Yes, sir.

Q. Whether or not the Holyoke Water Power Company—I presume it is agreed to—own various mills in the city, and various parcels of land, and various tenement houses? *A.* They do.

Q. That is, your object was to obtain the actual amount of coal consumed during the two years? *A.* My figures should so show it.

Q. During each of the two years? *A.* My figures should so show it.

Q. And they do so show it, I understand? *A.* Yes.

Mr. BROOKS. We can take these vouchers, may it please the Commission, and put them in one by one.

THE CHAIRMAN. I do not see the slightest occasion for that.

MR. BROOKS. It did not strike us so. We have put them in in bulk.

THE CHAIRMAN. You put them in in bulk?

MR. BROOKS. And my friend is at perfect liberty to criticise them as he pleases.

THE CHAIRMAN. That will do.

Q. Now at any time during your examination did you receive any dictation from any official or employee of the Holyoke Water Power Company with reference to the making up of your accounts? A. Not the slightest.

Q. Or from anybody else? A. No one else.

Re-cross.

By MR. MATTHEWS.

Q. Where was this 30-horse power old boiler, which was replaced at a certain expense, which you have charged a part to the operating and a part to the construction expense? A. I do not know what particular spot in the works it was.

Q. Where was the new boiler placed in the engine-room by the water gas plant? A. Somewheres in there. I don't know.

Q. You didn't inquire? A. Certainly, I didn't go up and personally investigate it.

Q. You are unable to state, then, where the old boiler was, and where the new one went? A. From personal knowledge, yes. I got my information from officers of the Company.

Q. You state there was nothing in the Company's books to show the cost of the gas plant. When were the Company's books opened, those that you examined? A. When did they open?

Q. What was the first entry in them? A. About in the year 1887, I believe.

Q. What did you find with reference to the gas plant at the time that account was opened in the book? A. Simply an arbitrary amount entered at the time they took possession.

Q. What was the amount? A. \$100,000, just simply

to get a valuation on the books. They might just as well have put it a million.

Q. Where did you get that information? *A.* From the officers of the Company.

Q. But you did find an entry in the books of \$100,000 as a value of the gas plant in 1887? *A.* It was put down there, for the gas, \$100,000 in 1887.

Q. Did you ask for any books prior to that time, that is, for the period prior to 1887? *A.* I think I traced that entry back to the original source. I think that was transferred from another ledger. I would not say now positively I did.

Q. You said salaries were apportioned in the sub-books? What sub-books did you refer to?

Mr. BROOKS. I may be mistaken. I didn't hear any such answer as that.

Q. I understood you to say you found certain general salaries on the sub-books? *A.* If I said sub-books I meant these returns only. They are not on the Company's ledger.

Q. I understood you to say they were in certain sub-books. All I want to know is what you meant? *A.* I don't know of any sub-books.

Q. You meant the returns to the gas commissioners? *A.* I meant returns to the gas commissioners. They are not on the Company's ledgers at all.

Q. Not in those books that Mr. Snow and Mr. Winchester kept? *A.* I don't know, I'm sure.

Q. You didn't use those books? *A.* They were made on an entirely different plan from those from which I made up the gas and electric light accounts.

Q. You said to Mr. Brooks that the profits of the gas and electric light plants did not represent anything like one-third of the total net profits of the Company? *A.* Yes.

Q. The question of course was put *de bene*:

Mr. BROOKS. Mine were not.

Mr. GREEN. It goes in under the general objection to anything relating to profits, if your Honors please.

Mr. BROOKS. Certainly, I understand that.

Mr. MATTHEWS. I meant to say my question goes in *de bene*. When you made that statement, you must have figured up what the percentage of the total net profits of the Company were, represented by the gas and electric light plants? A. I did not figure it up.

Q. Then you made that statement without knowing what the exact proportion was? A. I have not figured it.

Q. Can you tell approximately what it was?

Mr. BROOKS. Now wait a moment.

THE CHAIRMAN. I don't see the use of it, whether it is one-third, or otherwise.

Mr. BROOKS. If Mr. Matthews will come with me to the Commission. We do not care to have the entire profits of the Water Company go into the record.

Mr. MATTHEWS. If you will furnish me with the figures.

(Then followed a conference between the Commission and counsel.)

By Mr. MATTHEWS.

Q. Are you going to be here so that you can go over the books of the year 1898 with Mr. Robb?

Mr. BROOKS. Not till Thursday.

Mr. MATTHEWS. He can be here again?

Mr. BROOKS. Oh, yes, he will be here again.

Mr. MATTHEWS. Then I would like you to arrange for going over the vouchers for 1898 with Mr. Robb. They have so far only covered the vouchers for 1897.

Q. I would like to ask you now before you leave to-day, if you have time to pick out the vouchers for the coal and water bill for the year 1897, which amount to \$139.99? A. You can take that. You have it here.

By Mr. BROOKS.

Q. I think I have asked, but it is thought I have not, and I would like to ask again, if I have asked already. You have been asked whether or not you have had to do with the accounts of electric and gas companies other than those of the Holyoke Water Power Company in the State of Massachusetts, and I understand, outside of these; and I understand you say no? A. No, I have not.

Q. Whether or not you have examined the accounts of various and many electric companies and gas companies outside the Commonwealth of Massachusetts? *A.* I have, all over the country.

Q. And whether or not you have made the apportionments to the various accounts as the result of your examinations? *A.* I have.

By the CHAIRMAN.

Q. Can you give us some idea of how many companies you have examined, and how long you have been engaged in such work? You need not name the companies. *A.* Well, New York, New Jersey, Washington, Denver (Colorado), Virginia, Kentucky, Indiana. That covers a period of, I suppose, about five years.

THE CHAIRMAN. That is all.

Mr. BROOKS. Now, I would like the plans of the electric light plant. (Plans produced.)

WALLACE E. SAWIN, *recalled.*

By Mr. GOULDING.

Q. You made the plans of your electric plant? *A.* Yes, sir.

Q. Have you them before you? *A.* I have.

Q. Will you proceed to explain them to the Commission? *A.* The first drawing is a map of the city showing the electric lights and the poles all over the city.

Q. How many lights are there? *A.* 257, I believe.

Q. What is the number of the plans? *A.* They are all together. That is a duplicate of one of the exhibits.

Q. Is there anything further to explain about that? *A.* It simply shows the location of the stations.

Q. The lights are shown by those circular spots? *A.* The large ones are the lights, and the small ones are the poles.

Q. Well, proceed with the next. *A.* The next one is the general plan of the buildings, showing the lot lines, the land lines as they were laid out. That is a duplicate of the one that was exhibited.

Q. The next? *A.* The next is a general plan of the buildings, showing on a small scale the lay-out of the buildings; and then there are the details further on.

By the CHAIRMAN.

Q. What is that? *A.* That shows the connections, water pipes, water mains, and so on and so forth. This is the water pipe, this is sewer pipe, these are catch basins.

By Mr. GOULDING.

Q. What is that? *A.* An iron penstock running to the testing flume. That is shown because it is there for the purpose of a right of way. The next one is a general plan, showing pump and engine room. That is No. 4. It shows the interior on a larger scale. This is the engine room and dynamo room. This is the second floor, and this the engine room. The next one is a general plan of the boiler house,—the chimney, with a section of the boiler house. There are the several boilers that are built, and these are the foundations that are in. Here is a section of the boiler house showing the roof construction and one thing and another.

Q. Well, go on. *A.* Here is a drawing showing the piping of the boiler house in connection with the boilers and pumps,—plan, section and elevation. Here are two sections, one of the dynamo building, and one of the engine building, showing shafting in the dynamo basement in section, and the iron roof in section, also the engine in section. Here is a section of the wheel house, showing yokes and gears and water wheels, with penstock coming in and tail-race going out. Here is a plan, section, and elevation of the wheel-pit and tail-races.

By the CHAIRMAN.

Q. Is that stated on the plan anywhere? *A.* Yes, sir; there is the title there. Here is the wheel-pit, and here the penstock, and the tail-race is broken off. Here is a section and elevation of the back gate. Here is a plan, section, and elevation of the head-gate. Here are the penstocks. Here is a plan, section, and elevation of the chimney,—the stack, so called.

By Mr. GREEN.

Q. Is this all drawn to a uniform scale? A. The scales are different. This is one-quarter of an inch to a foot, and this one is an inch.

By Mr. BROOKS.

Q. You have it on your plan? A. They are all marked on the plans, wherever there is a change. Here is a drawing of the monitor in the boiler house. It is of iron construction covered with wood. Here are the engine foundations, the main pier carrying two. Here is a large elevation, and here is a side elevation.

By Mr. GOULDING.

Q. This is a plan of what? A. This is a plan of the engine foundations of the engine room.

Q. Have you attempted a perspective here? A. It is drawn as if you were looking down. There is a plan showing two elevations of the piers which I will show you later, in the basement of the dynamo building. They are detailed here because there are so many of them and so large. And here is one, and this is the other. The shafting extends somewhere down here (pointing out beyond the plan). Here is the elevation of the buildings,—boiler house, wheel house, engine room and dynamo building. Here is the south elevation of the dynamo building,—engine room, boiler house and chimney. The chimney is broken off.

By Mr. BROOKS.

Q. That is, broken off on your plan? A. Broken off, yes, on the plan; it is 150 feet high.

Mr. COTTER. You don't concede anything, Mr. Brooks?

Mr. BROOKS. We don't concede that.

THE WITNESS. Here is the west elevation, showing the dynamo building and boiler house, chimney also broken off on the plan. That next one is pretty long, Mr. Matthews, showing the basement of the wheel house, also showing the shafting, boxes, and piers. These piers are detailed on these other sheets.

By Mr. BROOKS.

Q. Mr. Sawin, you yourself made these plans? A. I did.

Q. Do the plans show all the machinery that is contained, or was contained,—is contained now in the building? A. Well, yes, very nearly; that is, all the large machinery.

Q. It does not show every small machine? A. No, sir.

Q. It shows all the large mechanisms? A. Yes, sir. Sometimes it is denoted by a square.

Q. From the plans can you obtain the dimensions of the larger machinery in the buildings? A. In most instances.

Q. Well, you have made an estimate of the quantities in the electric light and power plant? A. Yes, sir.

Q. I mean by that the excavation, filling, and the brick,—everything. I don't think you comprehend land? A. Taking in the square feet of land?

Q. Yes, sir. A. No. That doesn't show. I believe that is scheduled on the schedule that was filed.

Q. Certainly, that's all right. And does this contain your judgment of the quantities contained in the plant? A. Yes, sir.

Q. The buildings? A. Yes, sir.

THE CHAIRMAN. Do you want to put that in?

Mr. BROOKS. Yes, your Honor.

(Plans put in and marked 1 +.)

Mr. GREEN. Under the evidence I do not know that it has developed just how Mr. Sawin got his facts and figures here.

THE CHAIRMAN. You can examine him about that.

Mr. GREEN. I would like to, if your Honors please. Are you through, Mr. Brooks?

By Mr. BROOKS.

Q. You made your estimates from actual measurements?

A. Yes, sir.

THE CHAIRMAN. Hold on, just a minute. Does this explain itself sufficiently, Mr. Turner? You can examine him, Mr. Brooks.

By Mr. BROOKS.

Q. These estimates are made from actual measurements?

A. Yes, dated from now back to the time we built it. I was on the work at the time we built it. Therefore I took all the measurements.

Q. How many plans are there in the exhibit? A. Nineteen, I think. Nineteen.

(Estimate put in evidence and marked 2 +, the same being as follows:—

ESTIMATE OF QUANTITIES

IN THE

HOLYOKE ELECTRIC LIGHT AND POWER PLANT.

HOLYOKE, MASS., 1898.

(W. E. SAWIN.)

Headgate.

Excavation (earth), 1,085 cu. yds.
 Canal wall taken down (dry rubble), 262 cu. yds.
 Gravel puddling, 207 cu. yds.
 Back filling (earth), 744 cu. yds.
 Canal wall relaid (dry rubble, pointed 12 in.), 71 cu. yds.
 Rubble masonry (cement mortar), 154 cu. yds.
 Brick work (cement mortar), 4,977 brick.
 Hemlock sheet piling (tongued and grooved), 8,703 ft. B. M.
 Hemlock timber (mud sills), 3,907 ft. B. M.
 3-in. hemlock plank (tongued and grooved), 3,291 ft. B. M.
 2-in. white pine plank, 1,094 ft. B. M.
 Southern pine timber (dimension), 4,560 ft. B. M.
 Iron rack (front of head gate), 48 ft. 0 in. long, 12 ft. 6 in. high.
 Wooden gates (Southern pine), 12 ft. 11 in. x 10 ft. 6 in. x 6 in.,
 1,953 ft. B. M.
 Six iron rods $\frac{7}{8}$ in. diam., 12 ft. 11 in. long, nuts and washers,
 175 lbs.
 2 iron penstocks, 10 ft. 0 in. diam., 36 ft. 6 in. long.
 4 iron rings, 10 ft. 1 in. inside diam., $\frac{3}{4}$ in. x 4 in. iron; 32 bolts.
 2 vent-pipes, 6 in. diam., 7 ft. 0 in. long.

Headgate Machinery.

- 4 shafts, $2\frac{1}{8}$ in. diam., 16 ft. 10 in. long, with boxes and hangers.
- 2 shafts, $1\frac{3}{4}$ in. diam., 11 ft. 3 in. long, with boxes and hangers.
- 8 sets, racks and pinions, rack No. 857 Holyoke Mach. Co., 10 ft. 9 in. long, pinion No. 856.
- 2 wicket gates, 18 in. x 16 in., No. 85 Holyoke Mach. Co. list.
- 16 iron rolls, 4 in. diam., 3 in. long, with stands; also iron guides.
- 4 sets worm gears, Nos. 375 and 376, Holyoke Mach. Co. list.
- 4 hand wheels, 24 in. diam.
- 2 shafts, 4 ft. 9 in. long, $1\frac{1}{8}$ in. diam., with boxes, etc.
- 2 stands bolted to stone work, No. 120, Holyoke Mach. Co. list.

Wooden Fender (front of headgate).

- Southern pine (dimension), 1,146 ft. B. M.
- Spruce (dimension), 316 ft. B. M.
- 2-inch spruce plank (matched), 507 ft. B. M.
- Labor, including spikes on, 25,000 ft. B. M.

Wheel-pit and Tailrace.

- Excavation (earth), 32,333 cu. yds.
- Canal wall taken down (dry rubble), 343 cu. yds.
- Gravel puddling, 1,258 cu. yds.
- Stone filling under back gate (grouted), 50 cu. yds.
- Back filling (earth), 18,389 cu. yds.
- Canal wall re-laid (dry rubble, pointed 12 in.), 105 cu. yds.
- Rubble masonry (cement mortar): wheel-pit, 1,022 cu. yds.; tailrace, 912 cu. yds.
- Cut granite masonry, 7.5 cu. yds.
- Brick work (cement mortar): wheel pit, 99,851 brick; tailrace, 925,684 brick.
- Hemlock timber (mud sills), 61,075 ft. B. M.
- 4-in. hemlock plank (tongued and grooved), 96,720 ft. B. M.
- 2-in. soft pine plank " " " 36,017 " "
- Spruce sheet piling " " " 22,987 " "
- Labor, including spikes on 216,800 ft. B. M.

Wheel House.

- Brick work (lime mortar), 65,596 brick.
- 1 granite door sill, 4 ft. 8 in. x 18 in. x 8 in. } 26.39 cu. ft.
- 1 " " " 7 ft. 0 in. x 18 in. x 8 in. }
- 11 " " " 5 ft. 0 in. x 7 in. x $5\frac{1}{2}$ in. }

Southern pine dimension timber, 8,331 ft., B. M.

2-in. Southern pine plank, 3,208 ft. B. M.

3-in pine roof plank, 3,977 ft. B. M.

Labor including spikes on 15,500 ft. B. M.

1 single outside door and frame, 3 ft. 8 in. x 7 ft. 6 in. x 2½ ft. segment top.

1 double outside door and frame. 6 ft. 0 in. x 8 ft. 6 in. x 2½ in. segment top.

6 windows, box frames, double sash 16 lts., 12 in. x 18 in. glass.

5 windows plank frames single sash, 12 lts.; 12 in. x 18 in. glass.

Gravel roofing, 2,065 sq. ft.

Zinc flashing, 182 sq. ft.

Cast iron wall plates, 244 lbs.

Bolts: 12, 1 in. diam., 2 ft. 2 in. long, with nuts and washers; 6, 1¼ in. diam., 6 ft. 3 in. long, with nuts and washers,—224 lbs.

243 lin. ft. 1-in. pipe railing.

163 lin. ft. 1-in. steam pipe.

20 lin. ft. ½-in. steam pipe.

1 condenser.

1 1-in. Jenkins valve.

1 ½-in. “ “

13 ft. 9 in. ¾-in. gas pipe.

70 ft. 8 in. ½-in. “

3 ft. 0 in. ¼-in. “

3 single gas burners.

Whitening of walls (albamural), 1,628 sq. ft.

Painting, wheel-cases, yokes, iron girders, doors and frames, windows and frames, pipe railings.

Tunnels.

Excavation (earth), 584 cu. yds.

Back filling (earth), 526 cu. yds.

Flaggers, 9 in., 597 sq. ft.

Brick work (cement mortar), 86,265 brick.

Concrete, 655.5 sq. ft.

Southern pine timber, 107 ft. B. M.

Cast iron: 20 sole plates, 34½ in. x 11 in. x 1 in. } 3,438 lbs.
40 bottom plates, 8 in. x 12 in. x 1½ in. }

40 bolts, 1 in. diam., 4 ft. 0 in. long, with heads and nuts, 476 lbs.

140 ft. 3 in. 2-in. steam pipe.

1 2-in. Jenkins valve.

Quantities.

Electric Light Plant. ESTIMATE OF QUANTITIES.

289

Dynamo Building.

- Excavation (earth), 5,041 cu. yds.
- Back filling " 1,692 " "
- 6-in. flaggers, 3,396 sq. ft.
- 9-in. flaggers, 512 " "
- Concrete, 5,288 sq. ft.
- Brick work (cement mortar), 360,601 brick.
- Brick work (lime mortar), 272,412 brick.
- Brick work, special jamb brick (quarter-round), 3,800 brick.
- Red mortar, 13,355 sq. ft.
- Rubble masonry (cement mortar), 432 cu. yds.
- Cut stone (North River bluestone).
- 75 pier caps, sawed, planed, and drilled: 2-in. holes: 190 cu. ft.; 1,455 sq. ft. cutting; 92 lin. ft. drilling.
- 2 granite door-sills, 7 ft. 0 in. x 18 in. x 8 in.
- 2 " " 5 ft. 0 in. x 18 in. x 8 in.
- 1 " " 7 ft. 0 in. x 22 in. x 8 in.
- 99 " window-sills, 5 ft. 0 in. x 7 in. x 5½ in. } 165 cu. ft.
- Southern pine dimension timber, 40,211 ft. B. M.
- 4-in. spruce floor plank, 33,683 ft. B. M.
- 3-in. " " " 25,261 ft. B. M.
- 3-in. native pine-roof plank, 27,995 ft. B. M.
- ¾-in. Southern pine sheathing (finishing lumber), 2,658 ft. B. M.
- ¾-in. native " " " " 10,112 ft. B. M.
- 1½-in. maple top floor, 18,946 ft. B. M.
- 3 wooden platforms (outside).
- Labor, including spikes and nails on, 158,866 ft. B. M.
- 72 windows, box frames, double sash, 24 lbs., 12 in. x 18 in. glass, segment top.
- 7 windows, box frames, double sash, 20 lbs., 12 in. x 18 in. glass, segment top.
- 1 window, box frame, double sash, 16 lbs., 12 in. x 18 in. glass, segment top.
- 2 windows, plank frames, single sash, 12 lbs., 12 in. x 18 in. glass, segment top.
- 17 windows, plank frames, single sash, 8 lbs., 12 in. x 18 in. glass, segment top.
- 3 inside windows, box frames, single sash, 12 lbs., 9 in. x 13 in. glass, segment top.
- 2 outside doors, double, 3-in. plank frames, seg. top, 1½ in. ¾ round mould panels sheathed, doors 2 ft. 10 in. x 10 ft. 10½ in. x 2½ in.

2 outside doors, single, 3-in. plank frames, seg. top, $1\frac{1}{2}$ in. $\frac{3}{4}$ round mould, panels sheathed, doors 3 ft. 8 in. x 8 ft. 0 in. x $2\frac{1}{4}$ in.

With top light, single sash, 3 lts., segment top, with hinges.

1 outside single door without frame, panels sheathed, 6 lts. ground glass, 26 in. x 28 in. glass.

Door 3 ft. 2 in. x 11 ft. 0 in. x $2\frac{1}{4}$ in. segment top, 4 iron wall hinges.

1 sliding door, tinned, 3 ft. 0 in. x 7 ft. 3 in., with Coburn trolley track.

1 inside door with frame, 3 ft. 0 in. x 6 ft. 6 in. x 2 in., 6 panels.

5 inside doors, Southern pine doors and casings, 2 ft. 6 in. x 7 ft. 0 in. x $1\frac{3}{8}$ in. panels.

1 inside door, Southern pine door and casings, 3 ft. 0 in. x 7 ft. 0 in. x $1\frac{3}{8}$ in. panels.

1 inside door, Southern pine door and casings, 2 ft. 4 in. x 7 ft. 0 in. x $1\frac{3}{8}$ in. panels.

2 inside doors, Southern pine door and casings, 2 ft. 0 in. x 7 ft. 0 in. x $1\frac{3}{8}$ in. panels.

Cast iron wall and pier plates, caps, etc., 35,710 lbs.

Wrought iron, 17 roof trusses, 2910.5 lbs. each, 49,478 lbs.

" " 4 I beams, 12 in. x 12 ft. 6 in. x $\frac{3}{4}$ in., 2,534 lbs.

" " 3 brackets (under wire tower), 543 lbs.

Misc. bolts, $\frac{1}{2}$ in., $\frac{3}{4}$ in., $\frac{7}{8}$ in., 1 in., $1\frac{1}{8}$ in., $1\frac{1}{4}$ in., $1\frac{1}{2}$ in. diam., nuts and washers, 13,719 lbs.

Gravel roofing, 7,465 sq. ft.

Zinc flashing, 837 sq. ft.

63 lin. ft. 3-in. steam pipe.

11 " " $2\frac{1}{2}$ -in. " "

18 " " $1\frac{1}{2}$ -in. " "

48 " " $1\frac{1}{4}$ -in. " "

3,055 lin. ft. 1-in. " "

39 lin. ft. $\frac{3}{4}$ -in. " "

22 " " $\frac{1}{2}$ -in. " "

Jenkins valves, 1 $1\frac{1}{2}$ -in., 5 1-in., 2 $\frac{1}{2}$ -in.

Globe " 1 $1\frac{1}{2}$ -in.

Check " $6\frac{3}{4}$ -in.

1 bronzed radiator, 24 1-in. pipes, 30 in. high.

158 lin. ft. $1\frac{1}{2}$ -in. gas pipe.

285 " " 1-in. " "

239 " " $\frac{3}{4}$ -in. " "

245 " " $\frac{1}{2}$ -in. " "

Quantities.

Electric Light Plant.

ESTIMATE OF QUANTITIES.

291

- 35 lin. ft. $\frac{1}{2}$ -in. gas pipe.
- 35 burners.
- 64 lin. ft. $\frac{3}{4}$ -in. iron water pipe.
- 21 " " $\frac{3}{4}$ -in. galv. iron water pipe.
- 15 " " $\frac{3}{4}$ -in. iron water pipe.
- 128 " " 1-in. galv. iron water pipe.
- 7 " " $\frac{1}{2}$ -in. " " " "
- 40 " " $\frac{1}{2}$ -in. iron water pipe.
- 22 " " 2 $\frac{1}{2}$ -in. stand pipe.
- 24 " " 2-in. stand pipe.
- Jenkins valves, 1 $\frac{5}{8}$ -in., 1 1 $\frac{1}{2}$ -in., 1 1-in., 5 2-in., with fire hose connection.
- 5 50-ft. 0 in. lengths, 1 $\frac{1}{2}$ -in. fire hose.
- 5 16-in. brass nozzles.
- 65 lin. ft. 2-in. cast iron soil pipes.
- 77 " " 4-in. " " " "
- 6 " " 4-in. lead soil pipes.
- 5 2-in. traps.
- 154 lin. ft. 4-in. corrugated galv. iron leaders.
- 2 cast iron sinks, 21-in. x 42-in. x 6-in., with brackets and flash back (Mott Iron Works).
- 2 $\frac{5}{8}$ -in. faucets, garden-hose connection, with spring shut-off attachment.
- 1 $\frac{5}{8}$ -in. faucet, plain.
- 1 lead-lined water closet tank, 7-ft. 0-in. x 2-ft. 0-in. x 18-in.
- 3 water closets.
- 1 wash bowl.
- 1 urinal.
- 1 hydraulic elevator.
- 1 traveller with chain falls.
- Whitening of walls (albamural), 3,770 sq. ft.
- Painting.
- Hardware.

Steam-engine Building.

- Excavation (earth), 2,424 cu. yds.
- Old stone wall taken down, 184 cu. yds.
- Gravel puddling (under engine piers), 216 cu. yds.
- Back filling, 356 cu. yds.
- 9-in. flaggers (laid dry), 724 sq. ft.
- 10-in. " (grouted with cement), 1,321 sq. ft.
- Brick work cement mortar, 247,608 brick.

Brick work lime mortar, 116,250 brick.

Brick work special jamb brick (quarter-round), 2,200 brick.

Red mortar, 7,653 sq. ft.

14	granite window sills,	5 ft. 0 in. x 7 in. x 5½ in.	} 41 cu. ft.
4	" " "	4 ft. 0 in. x 7 in. x 5½ in.	
2	" door "	5 ft. 0 in. x 18 in. x 8 in.	
1	" " "	8 ft. 0 in. x 18 in. x 8 in.	

Cut granite cylinder stones, guide pedestals, pillow blocks, 2¾-in. holes, 380 cu. ft.

Granite bottom stones, cut bed and build, 2¾-in. holes, 133 cu. ft.

Southern pine (dimension) timber, 11,481 ft. B. M.

3-in. spruce plank, tongued and grooved, 13,752 ft. B. M.

3-in. pine roof plank, 18,436 ft. B. M.

1½-in. maple top floor, 5,157 ft. B. M.

Southern pine finishing lumber, stairs and sheathings, 1,761 ft. B. M.

1 outside platform.

Labor, including spikes, etc., on 50,587 ft. B. M.

12 windows—box frames, double sash, 24 lts. 12-in. x 18-in. glass, segment top.

2 windows—box frames, double sash, 24 lts. 12-in. x 15-in. glass, half-circle top.

4 windows—box frames, double sash, 18 lts. 12-in. x 12-in. glass, half-circle top.

2 single outside doors, 3-in. plank frames, segment toplight 1½-in. ¾ round mould. Doors 3-ft. 8-in. x 8-ft. 0-in. x 2½-in. panels, sheathed toplight, 1 sash, 3 lts., with hinges.

1 double outside door, 3-in. plank frame, segment top, 1½-in. x ¾-in. round mould, 4 panels.

Sheathed door, 6 ft. 8 in. x 10 ft. 10½ in. x 2½ in., 6 lts. ribbed glass 27 in. x 27½ in.

Cast-iron wall plates, back box pier caps, post caps, 6,765 lbs.

Bolts, miscellaneous, 4,085 lbs.

8 iron roof-trusses, 16,400 lbs.

Slate, 48 squares.

Wire snow guards, 1,716.

Zinc flashing, 230 sq. ft.

39 ft. 6 in. galv. iron gutter.

65 ft. 0 in. of 4-in. galv. iron corrugated leaders.

266 lin. ft. 1-in. pipe railing.

108 " " 1-in. gas pipe.

61 " " ½-in. " "

Quantities.

Electric Light Plant.

ESTIMATE OF QUANTITIES.

293

5 lin. ft. $\frac{1}{2}$ -in. gas pipe.
5 burners.
112 lin. ft. 3-in. steam pipe, 1 3-in. gate valve.
174 " " 1-in. " " (drip).
4 " " $\frac{3}{4}$ -in. " " "
5 ft. 6 in. lin. ft. 2- $\frac{1}{2}$ -in. steam pipe drip to receiver, 1 2- $\frac{1}{2}$ -in. gate valve.
2 condensers, 1 1-in. check, 1 $\frac{3}{4}$ -in. check, 1 1-in. Jenkins, 1 $\frac{3}{4}$ -in. Jenkins Valve.
2 50-ft. 0-in. lengths 1- $\frac{1}{2}$ -in. fire hose.
2 16-in. brass nozzles.
166 lin. ft. 2-in. wrought iron water pipe.
92 " " $\frac{3}{4}$ -in. " " " "
9 " " 3- $\frac{1}{2}$ -in. " " " " to boilers.
72 lin. ft. 2- $\frac{1}{2}$ in. wrought iron water pipe.
48 " " 3 in. " " " "
1 2-in. Jenkins valve — 3 3- $\frac{1}{2}$ -in. gate valves.
Hardware.
Fixtures.
Painting.

Boiler House.

Excavation (earth), 742 cu. yds.
Gravel puddling, 147 cu. yds.
Back filling, 145 cu. yds.
9-in. flaggers, 558 sq. ft.
10-in. " (boiler foundations), 1,160 sq. ft.
Brick work cement mortar, 44,912 brick.
" " " (boiler foundations), 13,400 brick.
" lime " 146,061 brick.
" paving, 19,300 brick.
Red mortar, 4,534 sq. ft.
42 lin. ft. 16-in. cement coping.
13 granite window sills, 5 ft. 0 in. x 7 in. x 5- $\frac{1}{2}$ in. }
1 " door " 3 ft. 4 in. x 18 in. by 8 in. } 21 cu. ft.
Southern pine dimension timber, 1,277 ft. B. M.
3-in. native pine roof plank, 13,592 ft. B. M.
Pine finishing lumber, 5,141 ft. B. M.
Clapboards, 92 sq. ft.
9 iron roof trusses, 2,150 lbs. each, 19,350 lbs.
135 $\frac{1}{2}$ -in. dia. bolts with nuts and heads, 153 lbs.
53 lin. ft. 1-in. iron pipe railing.

- Smoke pipe, 3,071 lbs.
- Hangers, 210 lbs.
- Gravel roofing, 2,878 sq. ft.
- 2 double outside doors with toplight, doors 6 ft. 10 in. x 8 ft. 0 in. x $\frac{3}{4}$ in. panels sheathed.
- Toplight single sash 15 lbs., 13 in. x 18 in. glass segment top.
- 1 outside single door 3-in. plank frame; door, 2 ft. 4 in. x 7 ft. 0 in. x $2\frac{1}{2}$ -in. segment top panels.
- 1 inside single door with casing, door 2 ft. 0 in. x 6 ft. 0 in. x $1\frac{1}{2}$ -in. panels.
- 1 inside tinned door, 4 ft. 4 in. x 7 ft. 2 in. x $1\frac{3}{4}$ -in. segment top wall hinges.
- 2 iron door sills.
- 4 iron side pieces, 2 ft. 6 in. x 5 ft. 0 in. x $\frac{1}{2}$ in.
- 6 iron wall hinges.
- 10 windows, box frames, double sash, 24 lbs., 12 in. x 18-in. glass, segment top.
- 16 windows in monitor, single sash, 24 lbs., 10 in. x 12-in. glass, with hinges.
- Labor, including nails, etc., on 20,000 ft. B: M.
- 322 lin. ft. 4-in. water pipe.
- 15 " " $2\frac{3}{4}$ -in. " "
- 38 " " $2\frac{1}{2}$ -in. " "
- 42 " " $2\frac{1}{2}$ -in. " "
- 188 " " 2-in. " "
- 52 " " $1\frac{1}{2}$ in. " "
- 21 " " $1\frac{1}{2}$ -in. " "
- 58 " " 1-in. " "
- 90 " " $\frac{3}{4}$ -in. " "
- 33 " " $\frac{5}{8}$ -in. " "
- Gate valves, 4 3-in., 1 $2\frac{1}{2}$ -in., 1 $2\frac{1}{2}$ -in., 1 4-in.
- Check " 1 3-in., 1 2-in.
- Jenkins " 1 $2\frac{1}{2}$ -in., 3 2-in., 6 $1\frac{1}{2}$ -in., 2 $1\frac{1}{2}$ -in., 4 1-in., 6 $\frac{3}{4}$ -in., 5 $\frac{5}{8}$ -in.
- 2 faucets, 1 spring attachment, 1 trap.
- 16 lin. ft. 1-in. gas pipe.
- 102 " " $\frac{3}{4}$ -in. " "
- 208 " " $\frac{1}{2}$ -in. " "
- 11 " " $\frac{1}{2}$ -in. " "
- 11 burners.
- 30 lin. ft. 3-in. wrought iron pipe.
- 2 3-in. globe valves.

Quantities.

Electric Light Plant. ESTIMATE OF QUANTITIES.

295

8 lin. ft. 14-in. steam pipe.
83 " " 12-in. " pipe.
45 " " 10-in. " "
33 " " 8-in. " "
29 " " 4-in. " "
1 14-in. L, 1 14-in. T, 10 12-in. Ls, 2 12-in. Ts, 4 10-in. Ls. 2 8-in.
Ls, 5 4-in. Ls, 1 12-in. to 14-in. T, 1 10-in. to 12-in. T.
Gate valves, 2 12-in., 2 10-in., 5 4-in.
1 12-in. L reduced to 8-in. two ways.
12 ft. 6 in. 16-in. wrought iron exhaust.
1 galv. iron hood.
1 sink, 36 in. x 20 in. x 6 in.
1 water closet.
Felt pipe covering, 740.5 sq. ft.

Chimney.

Excavation (earth), 1,261 cu. yds.
Gravel puddling, 135 cu. yds.
Back filling, 945 cu. yds.
121 spruce piles 12 in dia., 20 ft. 0 in. long.
Flaggers (grouted), 766 sq. ft.
Stone work (rubble, grouted), 168 cu. yds.
Brick work, 393,059 brick.
Iron ash door and frame, 500 lbs.
Ladder rungs, 576 lbs.
Anchor bolts, 85 lbs.
Iron cap, 4,800 lbs.

Coal Bin.

Spruce dimension timber, 2,500 ft. B. M.
3-in. spruce plank, 6,000 ft. B. M.
Labor, including spikes, etc., on 8,500 ft. B. M.

Sewers.

511 lin. ft. 6-in. vit. pipe.
56 " " 3-in. " "
1 6-in. T.
1 trap.
2 quarter turns.
1 6-in. Y.
1 3-in. x 6-in. Y.

3 catch basins.
Engineering, inspection, and plans.
Contingency.

Cross-examination.

By Mr. GREEN.

Q. Just a question or two, Mr. Sawin. Are all these plans your work? A. They are.

Q. Whether or not these are copies or reproductions of the plans in any way, which were used in the original erection of this plant? A. Some of them are copies of the actual drawings used.

Q. Did you make the actual drawings used? A. I did.

Q. Are these all your work? A. These all are my work.

Q. The actual drawings used were submitted to some engineers for the City in order that they might make measurements? A. Yes, sir.

Q. Whether those that were submitted to the City were correct? A. They were.

Q. As a matter of fact, the same as what you have submitted, as far as they go? A. Yes, sir.

Q. The plan shows the correct location? A. The one I let him have was correct.

Q. And this that you have got here shows the correct location? A. Yes, sir.

Q. Shows the underpinning? A. Yes, sir.

Q. Correctly put? A. Yes, sir.

Q. This one in regard to the land is to scale. I take it for granted it is. A. That is to the scale of one-sixteenth of an inch to a foot.

Q. This is the one? A. That is a duplicate of the one that is filed. This is No. 2.

Q. There is the stake down to the lower end. Now, the right of way which the Water Power mentions in its proposal goes between the wheel house and the dynamo room down over the penstock, the right of way which they desire to reserve? A. It is in here (showing), I understand.

Q. Running from where, down through here? *A.* Running from that side of the lot line, down here.

By Mr. COTTER.

Q. What do you mean by that? *A.* Running from the passageway between the wheel house and dynamo room.

Mr. BROOKS. You can use those plans.

Mr. GREEN. That will answer now, and if there is anything more we desire, we can ask him later. Oh, yes, there is one thing that I would like to call to the attention of the Commission. You certainly are familiar with the place where the Company now gets its coal to be used here in the electric light station? *A.* Oh, yes.

Q. Where is the coal dumped? Will you show where the coal pocket is at present? *A.* Right in here (showing).

Q. Where do you mean? Can you designate it? *A.* Near the east side of this lot line that is shown on this drawing.

By Mr. BROOKS.

Q. On whose land? *A.* Partly on the land of George R. Dickinson and partly on the Water Power's.

By Mr. GREEN.

Q. How much on the Water Power's? *A.* Not quite half of it, perhaps.

Q. Is there a quarter of it? *A.* Oh, yes, sir.

Q. Have you measured it, to be sure? *A.* Yes, sir.

Q. Where is the railroad that supplies the coal, by which the coal is brought to the depot? *A.* On this drawing.

Q. Where is it? *A.* Partly on the Water Power Company's and partly on the George R. Dickinson property.

Q. Isn't it on the land which is offered to the City? *A.* No, sir.

Q. So that, as far as the proposed tract of land is concerned, if taken by the City, there is no spur track which can be put on, none which now runs upon the proposed tract of land, or can be put upon the proposed tract of land, without going over somebody else's property? *A.* A spur track could be put in there.

Q. Over or through this land? *A.* Through the same land of George R. Dickinson and the Water Power Company.

Q. By getting permission from George R. Dickinson, or further permission from the Water Power Company? *A.* Yes, sir.

Q. Without further permission we cannot? *A.* No, sir, any more than Dickinson.

THE CHAIRMAN. Do you propose to show by this witness that your statements were correct as far as the electric company is concerned?

Mr. BROOKS. No, sir.

(Noon recess.)

AFTERNOON SESSION.

The Commission met at 2 P.M.

WILLIAM H. SNOW, *recalled.*

By Mr. BROOKS.

Q. Whether or not, Mr. Snow, you told Mr. Foster, the accountant, of the places where you placed your various material that was called for by various vouchers? *A.* I did.

Q. And whether or not what you told him you told truly?
A. I did.

Cross-examination.

By Mr. MATTHEWS.

Q. Did you call Mr. Foster's attention to the statements that were made in the returns to the gas commission? *A.* No, sir.

Q. You did not? Did you call his attention to the entries in your book, that separate memorandum book that you kept marked "Exhibit 34" or 35?

Mr. BROOKS. What one is that? I do not know that he was here when it was marked.

THE WITNESS. You are speaking of those memorandum books? (Indicating.)

MR. MATTHEWS. Perhaps we had better get the book.

MR. GREEN. They are on the desk there.

Q. What I meant was book marked "Exhibit 34." A. As far as I know, he never saw that book.

Q. That is, you mean Mr. Foster never saw it? A. I meant Mr. Foster.

Q. And yet this book contains an analysis of the expenditures on the gas plant, doesn't it?

MR. BROOKS. Well, was this book kept by him — by you?

THE WITNESS. No, sir.

MR. MATTHEWS. Did you answer that question or not? Mr. Brooks interrupted it.

(The question, "And yet this book contains," etc., was read by the stenographer.)

A. Yes, sir.

Q. Who kept this book? A. Mr. Adams.

MR. BROOKS. Is that No. 34?

MR. MATTHEWS. No. 34.

Q. Mr. Adams kept this? A. It is a private book of Mr. Adams.

Q. What is Mr. Adams's position in the gas works? A. Clerk.

Q. Under you? A. Yes, sir.

Q. For what purpose was this book kept? A. It was to aid him in giving the amounts to Mr. Stapleton, as they were compiling the gas commissioners' returns.

Q. The returns to the gas commission? A. Yes, sir.

Q. That is, the returns were made up by Mr. Stapleton upon information furnished by Mr. Adams? A. Yes, sir.

Q. Derived from this book? A. Yes, sir. I don't know but that should be qualified. This book is information compiled from one of those other books marked "Journal."

Q. That is, this book marked "34" is made up from one of the regular journals of the company? A. No, sir. Those that are marked "journals" are simply memorandum books.

Q. You mean the books that were numbered 36 and 37 the other day? *A.* Yes, sir, if that is the number. That is 36.

Q. Now what are the journals numbered 36 and 37? *A.* Those are memorandum books kept by Mr. Adams, being memoranda of the way the different charges are disbursed, as you might call them. It is an endeavor to keep a record through the year for their assistance at the end of the year, to know where and how the supplies, and whatever we may have bought through the year, have been used.

Q. And that record in these books 36 and 37 is kept from day to day, isn't it? *A.* No, sir.

Q. How often are entries made? *A.* Oh, perhaps sometimes not oftener than once in four or five months; depends altogether upon the time he gets to put to it.

Q. What are they made up from? — the vouchers? *A.* No, sir; he doesn't see the vouchers at all.

Q. What are these entries made from, then? *A.* Those are made from data that I give him. I have to O. K. all the bills that have any items on them belonging to the gas works; and at that time I simply put on a slip of paper, so that when he takes them off the disbursement book I can tell him how to divide them up here.

Q. Well, then, these books, 36 and 37, are made up from time to time of entries which are found in the disbursement book? *A.* Yes, sir; and pay-rolls; he gets also the labor account off the pay-rolls; I think those don't come in the disbursement book.

Q. The entries in books 36 and 37 are made up under your supervision, then? *A.* That is, as I — Yes, giving him directions how to charge them.

Q. And that is work done by Mr. Adams? *A.* Yes, sir.

Q. Then he uses the entries in books 36 and 37 to put into the classification of items contained in book 34, for the purpose of making up the returns to the gas commission? *A.* Yes, sir.

Q. Now did Mr. Foster see any of these books, either 34,

35, or 36? *A.* He saw these two marked "Journal," No. 36 and 37.

Q. I should have said 34, 36, and 37. He saw 36 and 37, did he? *A.* Yes, sir.

Q. And did you understand that he was making up these accounts in a different way from that in which they appeared in the gas commissioners' returns? *A.* I understood that he was making them up on a system of his own, without any reference to the gas commissioners' report. I didn't understand that they entered into the question at all.

By Mr. BROOKS.

Q. That the gas commissioners' returns didn't? *A.* I mean the returns.

By Mr. MATTHEWS.

Q. And you didn't show the gas commissioners' returns to him? *A.* No, sir.

Q. And he didn't follow the items in the returns to the gas commission?

Mr. BROOKS. Well —

Q. So far as you know, I mean? *A.* So far as I know, he didn't.

Q. Now I call your attention to the return for 1897, page 36, amount expended for construction during the year on the gas works, amounting to \$29,829.79. Were those entries put in that return at your request or under your direction? *A.* I don't know that I could say it was under either.

Q. Well, who would — *A.* Further than that I had marked the books showing where the materials were used. I make no figures on the returns at all.

Q. Who prepared that statement of items that should be charged to construction that year, for the returns to the gas commission? *A.* Mr. Adams prepared them, after I had marked the bills.

Q. Well, did Mr. Stapleton have anything to do with it?

A. As far as I know, he merely took Mr. Adams's items.

Q. And these items that I have spoken of, aggregating \$29,829.79, being the amount set forth in the return to the

gas commissioners for the year 1897 as chargeable to construction, were entered by Mr. Adams upon information furnished by you? *A.* Yes, sir.

Q. I call your attention to page 17, where against the printed words, "Estimated capacity of works per diem," appear the figures 500,000. That means 500,000 cubic feet of gas per diem? *A.* Yes, sir.

Q. You are not a gas engineer, are you? *A.* I don't know whether I would pass an examination or not. I have done nothing else all my life.

Q. Do you consider yourself qualified to install a gas plant? *A.* Yes, sir.

Q. And operate it? *A.* Yes, sir.

Q. And to testify concerning its value? *A.* I could go into the values if it was necessary.

Q. Is there any other gas engineer employed by the Company than yourself? *A.* There is not, unless you call the assistant superintendent such.

Q. Under you, you mean? *A.* Yes, sir.

Q. What is his name? *A.* Frank P. Fairbanks.

Q. Now you told me the other day that you had some memorandum books containing the record of daily output, etc.? *A.* Yes, sir.

Q. Are those here? *A.* No, sir; they are over to the gas works. We had to take them back.

Mr. BROOKS. We had them here.

THE WITNESS. We can have them in twenty minutes.

Q. Could you send for them now? *A.* Yes.

Mr. MATTHEWS. That is all I want to ask you until we get those books.

Mr. BROOKS. You want me to keep him here until you get the books?

Mr. MATTHEWS. No, I think you might as well go on with somebody else.

Mr. BROOKS. You want me to recall him?

Mr. MATTHEWS. Oh, yes.

SAMUEL B. WINCHESTER, *sworn*.

By Mr. BROOKS.

Q. Your name is Samuel Winchester? A. Samuel B. Winchester.

Q. You are a resident of Holyoke and have been for many years? A. Yes, sir.

Q. And you are in the employ of the Holyoke Water Power Company? A. Yes, sir.

Q. And in what capacity? A. Superintendent of the electric light department.

Q. And for how many years have you held that position? A. Fourteen years and five months, nearly.

Q. And were you at work in the electric light department before you became superintendent? A. No, sir.

Q. Here, I mean, in Holyoke? A. No, sir.

Q. Did you make up a schedule of the personal property comprehended by the electric light plant? A. I did.

Q. Which was furnished to the City? A. Yes, sir.

Q. And whether or not the property mentioned in that schedule was a true statement of the property owned by the electric light company? A. It was.

Q. And of the supplies as well? A. Yes, sir. I think the supplies were not put in the schedule. I think they were left out.

Q. Well, look at that. (Handing schedule to witness.)

A. To be added. These supplies, such as coal, carbons, incandescent lamps, spare belts and belting, oil, waste, etc., etc., are to be put in at cost, and are in addition to the price heretofore named.

Q. Now, have you a list of those supplies? A. Including that last statement there?

Q. Yes, of the supplies. A. I wouldn't say that we had. That varies constantly. An inventory of that was to be taken when the plant was finally settled for.

Q. Have you a list of the supplies that were there at the time of the filing of this schedule or at the time of the pas-

sage of the vote by the City? Of the supplies, not the machinery? *A.* I couldn't say.

Q. Can you furnish such a list? *A.* Yes, sir; we have a list at the time our annual inventory is made, but about that time I couldn't say.

Q. Will you be kind enough to have that list struck off, and we will supply it to the other side and put it in evidence. Your annual inventory is taken when? *A.* October 1.

MR. GOULDING. That has nothing to do with that. That is some distance of time from that.

THE WITNESS. And, of course, the supplies are all the time changing.

Q. You have your inventory of Oct. 1, 1898? *A.* Yes, sir.

Q. And of course the one of Oct. 1, 1897?

THE CHAIRMAN. When was this thing taken?

MR. BROOKS. Filed Jan. 8, 1898.

THE CHAIRMAN. Can't you take it from the books and find out how much stuff you had then?

THE WITNESS. Substantially.

MR. BROOKS. Well, if you will do that we will put that in later. Do the Commission care to have any exposition from him of the works of the electric light plant, in connection with the plans?

THE CHAIRMAN. No, I think we do not.

Q. Mr. Winchester, you know Mr. Foster, the accountant who testified here? *A.* Yes, sir.

Q. And from time to time did you give him information as to where the various material contained in the vouchers was used and for what purpose it was used? *A.* I did.

Q. And was that information that you gave him correct? *A.* Yes, sir, so far as I know.

MR. BROOKS. That is all I care to inquire at the present time.

Cross-examination.

By *MR. MATTHEWS.*

Q. Did you call Mr. Foster's attention to the returns made to the gas commission? *A.* No, sir.

Q. Did you call Mr. Foster's attention to a book marked "Exhibit 35," containing an analysis of expenditures? *A.* No, sir.

Q. Who kept this book marked "Exhibit 35"? *A.* I don't know. I have nothing to do with the books. They are kept at the office here of the Company.

Q. This purports to be a classification of expenditures on account of the electric light works? *A.* I have nothing to do with that at all.

Q. You didn't keep this book? *A.* No, sir.

Q. Do you know who did? *A.* No, sir.

Q. Do you know whose handwriting those entries are in? *A.* I should say it was R. C. Winchester.

Q. What office does he hold in the Company? *A.* Cashier.

Q. He kept this book, then, so far as you understand? *A.* So far as I know by the writing.

Q. Did you furnish the information with which to make up this book? *A.* No, sir.

Q. Do you know where he got it? *A.* No, sir.

Q. You didn't call that book to Mr. Foster's attention? *A.* No, sir.

Q. Who makes up the returns to the gas commission for the electric light plant? *A.* It is made up here in the office by different individuals.

Q. Well, mention who they are, please. *A.* Part of it, that connected with the wire, the amount of coal used, the number of men employed, engines, boilers, etc., I make up. The financial part of it is all made up by the book-keepers here in the office.

Q. You make what we might call the structural part of it? *A.* Yes, sir.

Q. And the financial part, relating to receipts and expenses, is made up here? *A.* Yes, sir.

Q. In the main office of the company? *A.* Yes, sir.

Q. And who would make up that part of it? *A.* I think Mr. Stapleton and Mr. R. C. Winchester.

Q. When was this electric light station built, Mr. Winchester? *A.* The present station?

Q. Yes. *A.* 1891.

Q. Was it built by the Holyoke Water Power Company or by the Holyoke Electric Light & Power Company? *A.* By the Holyoke Water Power Company.

Q. After they bought the plant from the Holyoke Electric Light & Power Company? *A.* Yes, sir.

Q. And where was the plant of the latter company situated? *A.* The Holyoke Electric Light & Power Company?

Q. Yes. *A.* That was situated at what is called the Cabot Street mill.

Q. Is that property belonging to the Holyoke Water Power Company? *A.* Yes, sir.

Q. That plant was bought in 1888, wasn't it? *A.* I can't tell the year. I am not positive about the year. I think that was it.

Mr. BROOKS. I think 1887, but I wouldn't be quite sure; it don't make any difference.

Q. 1887 or 1888. Then this building where you now are was built in 1891? *A.* Yes, sir.

Q. And did you move the machinery over from the Cabot Street mill to the present building? *A.* Some of it.

Q. How much of it? *A.* Well, I think the dynamos, rheostats, regulators and electrical instruments, switchboard apparatus.

Q. I think you must talk a little louder. *A.* The dynamos, electrical instruments, switchboard apparatus, regulators, etc., was all that was moved.

Q. Was all moved over? *A.* That was all. I mean there was no machinery moved.

Q. Nothing but the electric plant? *A.* Yes, sir.

Q. You didn't move the engines? *A.* No, sir.

Q. The engines were put in new, weren't they? *A.* Yes, sir.

Q. And the boilers? *A.* Yes, sir.

Mr. MATTHEWS. Can you furnish us with those plans that you had this morning?

Mr. BROOKS. You have taken them. I have given them to you.

Mr. MATTHEWS. I want Mr. Winchester to put some marks on them, the number of machines, etc. Meantime I will ask Mr. Winchester some further questions.

Q. Is your distribution system entirely overhead or is part of it underground? A. Entirely overhead.

Q. Has there been any agitation in Holyoke for undergrounding the wires?

Mr. BROOKS. I will object to that.

THE CHAIRMAN. Has there been any what?

Mr. MATTHEWS. Any agitation or movement in the City of Holyoke about undergrounding the wires. The importance of the inquiry, may it please the Commission, is this: that one of the great expenses to which electric light companies are now being put from year to year in increasing volume all round, is the expense of putting wires underground which now are overhead.

THE CHAIRMAN. Well, this refers to public agitation, or something of that kind.

Mr. MATTHEWS. The point that I was trying to get at was whether any movement of that sort had been started in Holyoke, or whether there was any demand that had come to the attention of the Company —

THE CHAIRMAN. Well, that latter —

Mr. MATTHEWS. — for undergrounding the wires. I will put the question in that form, then.

Mr. GOULDING. We object.

THE WITNESS. I haven't heard of any such thing.

Mr. BROOKS. It cannot be competent, because they were not grounded — taking it as it is.

Mr. GOULDING. I don't know as it makes very much difference; the witness says he hasn't heard of any such thing.

THE CHAIRMAN. Well, the witness has disposed of it.

Q. What books are kept at the electric light station, Mr. Winchester? A. None.

Q. None at all? A. No, sir.

Q. Don't you keep any book of any sort yourself? *A.* No, sir.

Q. Do you keep any record of the electrical output of the station? *A.* No, sir.

Q. Is any kept by anybody? *A.* No, sir.

Q. Have you no machinery for the purpose? *A.* I don't just understand the question.

Q. Have you any machinery for noting the electrical output of the station? *A.* No, sir.

Q. Is there any record made of the operations of the turbines in the wheel-pit? *A.* You mean any regular record?

Q. Yes. *A.* No, sir.

Q. No books kept showing the operations of those wheels? *A.* No, sir.

Q. No record of any sort? *A.* Why, from time to time, as we wish to find out how much power is being used, we take the records for a certain length of time.

Q. What do you do with those records when you take them?

Mr. BROOKS. I suppose you mean if he preserves them.

A. I don't preserve them, if that is what you mean.

Q. What do you do with them? Tear them up? *A.* Tear them up.

Q. Throw them away? *A.* Throw them away.

Q. Then you don't pretend in the Company to keep any permanent record of the operations of those water wheels? *A.* Yes, sir.

Q. Well, what record? *A.* The hydraulic department take twice every twenty-four hours all the wheels connected with it.

Q. All the wheels owned by the Company? *A.* Yes, sir.

Q. Including the four wheels that are operated in connection with the electric light plant? *A.* Yes, sir.

Q. Now, who has charge of those records? *A.* Mr. Frank Sickman.

Q. Is he the gentleman who has been on the witness stand already? *A.* No, sir.

Q. Another gentleman of the same name? *A.* The assistant hydraulic engineer.

Q. And it is his business to keep records of the water wheels? *A.* Yes, sir.

Q. And you say he takes them twice a day? *A.* That is as I understand it.

Q. And where are those records kept? *A.* Here at the office.

Mr. MATTHEWS. We would like to have those records, *Mr. Brooks*; only those relating to those four wheels, not the rest.

Mr. BROOKS. I presume they comprehend everything. For what period of time?

Mr. MATTHEWS. For the past two years; take these same two years.

Mr. BROOKS. 1897 and 1898.

Q. Just a few questions before I ask you to explain to the Commission the operation of the station. You run an arc and incandescent system both, don't you? *A.* Yes, sir.

Q. And what is the capacity of your arc lights, the candle-power? *A.* We run two kinds, one about 2,000 candle-power, and one 1,200 candle-power.

Q. Then you run full arcs and half-arcs? *A.* Yes, sir.

Q. Half-arcs are for public use? *A.* Yes, sir.

Q. And all commercial arcs are full arcs? *A.* Yes, sir.

Q. That is, you don't send out commercial half-arcs? *A.* No, sir.

Q. Then you run some incandescent lamps, don't you? *A.* Yes, sir.

Q. And do you distribute electricity for power? *A.* Yes, sir.

Q. Heat? *A.* No, sir.

Q. Only for lighting and power? *A.* That is all.

Q. Are your arc lamps enclosed or open? *A.* Open.

Q. You haven't any enclosed arc lamps? *A.* Not one.

Q. What is the character of the poles upon which the lamps are hung? Are they wood or iron? *A.* Wood.

Q. And the height? *A.* From 25 to 30 feet is the general height.

Q. What wood are they made of? *A.* Chestnut and southern pine.

Q. And what is the material of the poles that support the wires between the lamps? *A.* Some chestnut, some southern pine, and some iron.

By Mr. GOULDING.

Q. What is that? *A.* The poles carrying the wire.

By Mr. MATTHEWS.

Q. I will call your attention to the second plan in the series produced this morning, and direct your attention to the coal bin. That, as I understand it, is not shown on this map?

A. I don't see it.

Q. And, in fact, only part of it is situated on land which the Company proposes to give to the city? Is that so? *A.* Why, the engineers would be the proper persons to answer that. I had nothing to do with running these lines at all.

Q. Don't you know where the line is, as a matter of fact, on the premises? *A.* As a matter of fact, I do not. As a matter of opinion, I might say.

Q. Well, we will stick to facts. Do you know what the capacity of that coal bin is? *A.* No, only guess work. We have had 100 tons of coal in there several times.

Q. Is that the largest amount you ever had there? *A.* About the largest; in that vicinity; it might run to 110; at any one time.

Q. Were all these buildings built at the same time, in 1891? *A.* Yes, sir.

Q. The wheel house, the dynamo room, the steam engine room, the boiler house? *A.* Yes, sir, and the chimney.

Q. And the stack; all built in 1891? *A.* Well, I say built in 1891. They were completed in 1891. The foundations may have been started in 1890. I think the raceway was built before 1891.

Q. The raceway was built before 1891? *A.* I think it was.

Q. Do you know when that was built in? *A.* No, I couldn't say. I think it was built two years before the final building was completed.

Q. And how long was the Company in erecting these build-

ings? *A.* The buildings were all erected in 1891. I think there was no — Well, I won't say that. I think they were started in 1890.

Q. Were they built by contract? *A.* No, sir.

Q. By the day? *A.* Built by the day.

Q. Under the superintendence of the Company? *A.* Yes, sir.

Q. Who had charge of the construction of them? *A.* Mr. Sickman had charge.

Q. Which Mr. Sickman? *A.* J. M.

Q. The gentleman who has been on the stand? *A.* Yes, he was on the stand, the first witness called.

Q. He had charge of all of it? *A.* He had charge of the engineering department entirely, and I think the foreman of the wood working department had charge of the wood construction.

Q. You can't place the date when those buildings were begun nearer than late in 1890? *A.* No, sir.

Q. And they were completed soon afterwards, in 1891? *A.* Well, we were running them in August, 1891.

Q. And the tailrace was put in two years before, was it? *A.* I should say it was.

Q. For what purpose was that tailrace? *A.* The electric light.

Q. Two years before? *A.* Yes, sir.

Q. And you didn't start the electric light— *A.* That would be only one year before this other work was started, you understand?

Q. When was the wheel house built? *A.* The wheel house was built in 1891.

Q. Wasn't this tailrace built for an extension of the Cabot Street mill? *A.* No, sir.

Q. Are you sure of that? *A.* Yes, sir.

Q. Did you say it was built two years before? *A.* Two years before the completion.

Q. Before the electric light plant was put up? *A.* Yes, sir.

Q. Two years before the completion? *A.* Yes, sir.

Q. And they were not very long in building? *A.* They ran through 1890 and 1891.

Q. The whole of 1890? *A.* Well, I can't tell you what time of the year they started; their foundations were started late in the year 1890.

Q. The Cabot Street mill is immediately adjoining the wheel-house, isn't it? *A.* It is.

Q. And this tailrace which was put in, as you say, for the electric light plant, and which is now used for that purpose could also be used for an extension of the Cabot Street mill, couldn't it? *A.* Well, that is a matter presently arranged, certainly.

Q. What do you mean by that, Mr. Winchester? *A.* I mean all this flume business, and all the wheels, are all fixed so as to run the shafting this way; it couldn't be run the other way unless it was entirely built over.

Q. That is, you would have to build the pits over? *A.* Have to build the pits over.

Q. And if that were done, this tailrace and this water power could be used for an extension to the Cabot Street mill, couldn't it? *A.* It would give just as much power for the Cabot Street mill, or even across the canal.

Q. Well, it could be used for the Cabot Street mill or anything else? *A.* Yes, sir.

Q. What do you mean by "across the canal?" *A.* I mean if you are going to change this over, it would be immaterial which side you ran the shafting from it. I mean the shafting could be run across the canal as well as this way or the other way.

Q. Across the first level canal? *A.* Yes, sir.

Q. For the benefit of the land on the other side? *A.* Yes, sir.

Q. Of the canal? *A.* If you are going to change it over, it would be immaterial which direction it ran after it was built over.

Q. The power could be used not only for this electric light

plant, but also for the Cabot Street mill with certain alterations in the wheel-pit? *A.* By building it over completely.

Q. By building it over, the water power now used for the electric light plant could be used for an extension to the Cabot Street mill, couldn't it? *A.* I think so.

Q. Well, you haven't any doubt about it, have you? *A.* I don't see how you can confine power to one place. We use it all over the city from that place now.

Q. That is what I thought. I want to find out what other place in the control of the Water Power Company this could be used for if it wasn't used for the electric light plant. *A.* Well, we are using it electrically all over the city to-day.

Mr. BROOKS. That isn't the question, hardly, is it?

Mr. MATTHEWS. Well, it is rather a broad answer. He says they could use it anywhere, as I understand it.

Mr. BROOKS. I understand he means electrically by that.

Mr. MATTHEWS. Perhaps I don't understand.

Q. What do you mean by using it electrically all over the city? *A.* I mean it is put into electricity and carried all over the city and used as power.

Q. Do you mean to say that as now used it is converted into electrical power and distributed all over the city? That is what you mean, is it? *A.* Yes, sir.

Q. Now my question was something different. If this tailrace was here just as it is and the electric light plant should be abandoned, and you should take out that wheel-pit and abandon it, discontinue it entirely, then for what purpose could you use this water power? *A.* I don't know.

Q. Well, couldn't you use it for an extension to the Cabot Street mill? I understood you to say so a moment ago. *A.* Well, supposing the Cabot Street mill had power enough of itself as it is; couldn't use all the power it has.

Q. Yes. Could you, by building on to the Cabot Street mill, building another mill immediately adjoining the Cabot Street mill, or enlarging that mill so as to make a bigger one, could you then utilize the power that now runs the electric light plant? *A.* You could change the wheel-pit over so as

to use that wheel-pit instead of the one that belongs to the mill, if that is what you mean.

Q. Could you, by readjusting the wheel-pit, make the present water power that operates the electric light station available for an enlargement or extension of or addition to the Cabot Street mill, if built? *A.* If it wasn't used for producing electricity, it could be used for any purpose, by any building built over the wheel house.

Q. It could be used for the Cabot Street mill, couldn't it, or for an extension of it? *A.* Yes, sir, or any other building.

Q. Yes, for any other building. All the land in the rear of the electric light station belongs to the Holyoke Water Power Company, doesn't it? *A.* I think it does.

Q. Between the Cabot Street mill and George R. Dickinson, the Dickinson Paper Company's land, doesn't it? *A.* Well, that is my impression. Of course, I don't know about that.

Q. And, if this water power were not used for the purposes of the electric light station, it could be used for any new mill that should be built immediately back of the present wheel house, for instance, of course by moving the penstocks down?

A. Why, there is no—

Mr. GOULDING. Moving the penstocks?

Mr. MATTHEWS. Or building new ones. Of course, you couldn't use the present wheels, as located at present, for power down here, because the water drops there.

(The last question was read by the stenographer.)

A. I don't see why it couldn't.

Q. Now I misunderstood you, didn't I, when I said you could use it also for land, or as appurtenant to land, on the other side of the canal? *A.* I thought you were speaking of it electrically; it wouldn't be practicable to do it otherwise.

Q. It wouldn't be practicable to use this power on the other side of the canal, you think? *A.* No, sir.

Q. Well, does the Holyoke Water Power Company own land on the other side of the canal? *A.* I think they do.

Q. Is that land all occupied? *A.* No, sir.

Q. Why wouldn't it be practicable to use this power, then, on the other side of the canal as well as on this, if you built tailraces and wheel-pits, etc., to work it? *A.* It could be carried electrically.

Q. Why couldn't it by using the power? *A.* You mean to carry it across in shafting?

Q. Well, any way. I just want your explanation of why it would be impracticable. *A.* Well, it isn't impracticable to carry it anywhere in the city and use it as power.

Q. After it is converted into electricity? *A.* After it is converted into electricity.

Q. Now I am speaking of using the water power. Would it be practicable to use it the other side of the canal, across the way from the electric light plant, as I understood you to say a moment ago, though I may have misunderstood you? *A.* Well, I was thinking of using it electrically; on any vacant plant in the city. You might use it as electricity.

Q. I am speaking of the use of the water power as a water power. It could be used anywhere along the first level canal, couldn't it? *A.* I don't understand that question.

Q. If this power was not used at this point, this tailrace, it could be used anywhere else, couldn't it? *A.* I think the power that goes with the electric light station is held specially for that wheel-pit and race.

Q. Held by whom? By the Company? *A.* By the Water Power Company.

Q. Supposing the Water Power Company did not hold it for that particular land, then they could use it somewhere else, for other land? *A.* I don't know about that.

Q. Have you any doubt about it? *A.* I am not competent to answer that question.

Q. How long have you been in the employ of this Company, Mr. Winchester? *A.* A little over fourteen years.

Q. And their principal business is the sale of water power, isn't it? *A.* I think so.

Q. Is there a constant demand for it? *A.* They are sell-

ing some. I don't have anything to do with the water power end of it.

Q. Is there a good market for it here in Holyoke? *A.* There seems to be a fair market.

Q. Have you any doubt that if this water power should be divorced from this plant it could be used by the Holyoke Water Power Company somewhere else?

Mr. GOULDING. I don't see how he is competent to give an opinion on such a subject as that.

Mr. MATTHEWS. If he doesn't want to answer it on that ground, why, I will leave it.

Q. I would like to call your attention to the lines given on this plan as the boundaries of the lot which the Company proposes to convey to the City. They run very close to the windows of the dynamo room and the steam-engine room and the boiler house, don't they? *A.* They seem to.

Q. So close that, if the Company should build upon its remaining land, it would shut out the light almost entirely from that side of those three rooms, wouldn't it? *A.* I don't know the exact distance.

Q. Assuming it is between 18 inches and 3 feet.

THE CHAIRMAN. Anybody would know that, of course.

Mr. MATTHEWS. Well, if that is to be assumed, why, I will pass on to something else.

Q. Now, Mr. Winchester, I will call your attention to the third plan in this group. I see something marked "Bin." That is the coal bin you are using for storage of coal now? *A.* Yes, sir.

Q. And this dotted line, which is called the line of the fence, is the boundary line of the lot which is to be conveyed to the City, is it? *A.* I suppose so, the same as that.

Q. That line is not shown prolonged through the coal bin, because it would leave the coal bin on somebody else's land, wouldn't it? *A.* Apparently, it would.

Q. And that would leave a capacity for the storage of coal of something less than 50 tons? *A.* In the coal bin, you mean?

Q. Yes. *A.* We at present store the coal in the vacant space in the boiler house.

Q. I understood you to say there was a capacity in the whole coal bin of 100 tons? *A.* Yes, sir.

Q. This line would leave you a storage of less than 50 tons, besides what storage capacity you would get in the boiler house? *A.* Yes, sir.

Q. You have got five boilers? *A.* Yes, sir.

Q. American type? *A.* Manning upright type, 165 horse power each, made by Holyoke Steam Boiler Works, I believe, Coghlan's.

Q. That makes a total capacity of what? *A.* Five times 165,—825.

Q. 825 horse power, is it? *A.* Yes, sir.

Q. They are arranged in two stacks, one of two and one of three, are they not? *A.* Yes, sir.

Q. And you run those when the water is shut off? *A.* Yes, sir. We use one of them for heating through the winter.

Q. And you run the boiler plant as a whole when the water is off? *A.* When the water is shut out of the canal.

Q. How many of those boilers does it take to run the electric plant when the water is off? *A.* Four.

Q. Does that include one for heating, or does it take four for power? *A.* Well, that includes one for heating. We have been able to run any load we have had with three boilers working on the engine.

Q. That is, so far as the power required to run your dynamo is concerned? *A.* Yes, sir.

Q. Then you have in the three boilers which you require for your maximum load on the electric light machinery 495 horsepower boiler capacity as needed for that purpose? *A.* That is the rated capacity. They have been run much higher than that.

Q. That is the rated capacity, 165 each? *A.* Yes, sir.

Q. And you would have one spare one for heat, and a fifth spare one altogether? *A.* Yes, sir.

Q. Now pass on to the engine room. You have two 400 horse power engines, haven't you? *A.* Yes, sir.

Q. With the foundations put in for compounding? *A.* I think not.

Q. You think not? Have you got the foundation plans here? *A.* Yes, sir. The centre foundation, I think, is all right; but I think the outboard bearing foundations should be enlarged to double the engine capacity.

Q. I understood you to say those boilers were rated at 165 horse power each? *A.* Yes, sir.

Q. Where did you get that information or fact? *A.* I think that is what the specifications called for.

Q. Have you got the specifications? *A.* No, I haven't.

Q. Those boilers were put in in 1891, when these buildings were erected? *A.* Yes, sir.

Q. Do you know where the specifications are kept? *A.* No, I don't; in fact, I never saw them.

Mr. MATTHEWS. Can you produce those specifications or the contract for these boilers, Mr. Brooks?

Mr. BROOKS. Mr. Reuben Winchester.

A VOICE. He's just stepped out.

Mr. BROOKS. Do you want them this afternoon?

Mr. MATTHEWS. Any time when it is convenient.

By Mr. MATTHEWS.

Q. Those engines are 400 horse power each? *A.* Yes, sir.

Q. They are run non-condensing? *A.* Yes, sir.

Q. When this electric station is being operated entirely by steam, how much horse power is developed in your engines to run the plant at the period of its maximum load? *A.* Do you mean the total load on the two engines?

Q. I will put the question in this way: do you require more than one of those engines to run your dynamos at any time? *A.* We do.

Q. Do you have any records to show when you are running more than one engine, or whether you are running one or both? Do you keep records in the engine room showing when those engines are started up? *A.* No, sir.

Q. You don't? You say at times it has required both engines to run your plant? *A.* Yes, sir.

Q. Not both running at full capacity? *A.* No, sir; but one engine wouldn't do the work alone.

Q. How much would it fall short? *A.* About 150 horse power.

Q. That is, at the period of the maximum load? *A.* Yes, sir.

Q. Between five and six in the evening in a dark day in the winter? *A.* Yes, sir.

Q. Then, if it takes both those engines to run your electric business when the water is off in dark days in the winter, and one of your engines should break down, your plant would be in a bad way, wouldn't it? *A.* Yes, sir.

Q. That is, you have no excess in your engine room as you have in your boiler room? *A.* There is space there for duplicating, and also for another single engine there, making 2,000 engine capacity in what we call the engine room.

Q. The room is large enough? *A.* The room is large enough.

Q. But the engines are not there, and the foundations are not there altogether? *A.* Part of them.

Q. You say you keep no records whatever of the operations of those engines? *A.* No, sir.

Q. So it is impossible for anybody in the employ of the Company to find out what those engines do, or are required to do, or are called on to do, in a given time? *A.* I didn't say that.

Q. What have you that will enable you to tell? *A.* We have had tests made of them.

Q. Well, what tests? *A.* Indicator cards, amount of coal used.

Q. Do you keep those tests? *A.* I presume I could find them. I do not know just where they are.

Q. How often are they made? *A.* They have never been made but once or twice since the plant started.

Q. They would not be of much value as indicating the amount of business you are doing, would they? *A.* We don't run those engines more than five or six days in the whole year.

Q. I am coming to that presently. Do I understand that those tests were for the purpose of estimating the capacity of the engines or the amount of power necessary to be developed by them to run the plant, which? *A.* Neither.

Q. What were they for? *A.* To satisfy ourselves.

Q. As to what? *A.* As to the running of the engines, whether they were doing the work they should do.

Q. They were to test the capacity of the engines, weren't they? *A.* No, sir: they have never been run at their full capacity.

Q. Either engine? *A.* I cannot say that either engine has.

Q. Now you said that you only used those engines about five days in the year? *A.* I think in the year ending at the present time five days would cover it.

Q. Do you mean five days in the aggregate or parts of five different days? *A.* I mean five times 24 hours. At about the 4th of July the water is out of the canal for from three to five days.

Q. About the 4th of July? *A.* Those engines have not been started but twice to my knowledge since then.

Q. Since the 4th of July last? *A.* Yes, sir.

Q. Since the 4th of July last they have not been started twice? *A.* But twice.

Q. Then you must run this plant by water power Sundays? *A.* We don't run Sundays except in the evenings.

Q. How do you run the plant then? *A.* By water.

Q. Then I was right when I said that you must run the plant on Sundays.

MR. BROOKS. Sunday ends at Sunday night.

THE WITNESS. We have no Sunday day service.

Q. Meaning by Sunday Sunday evening as well as Sunday before sunset, you run your plant Sundays by water power?

A. Whenever there is water in the canal.

Q. And there has been ever since the 4th of July last? *A.* Yes, sir.

Q. Now you say the water power was off for three or four days about the 4th of July last and one or two occasions since?

A. That was all.

Q. What were those occasions? *A.* Well, one was due to anchor ice; we started at two o'clock and five minutes in the morning. It didn't shut us down, but we expected it would. We kept trying to run with water, and started the engine.

Q. What was the other occasion? *A.* The other occasion

was when we ran the engine to see how much the coal consumption would be.

Q. That was a test, was it,—that was one of the tests which you made? *A.* Yes, sir.

Q. You could have run the plant by water on that occasion? *A.* Yes, sir.

Q. So that really, since the 4th of July last, you have only had to operate that steam plant on one single occasion? *A.* About four hours.

Q. You didn't have to do that as it turned out? You could have got along without it? *A.* We couldn't tell. We shut the water off from the wheels. We thought the anchor ice was forming perhaps.

Q. Then you have run this plant, and you do run it, habitually by water power Sunday evenings, or whenever your electricity is running on Sundays, and you run it by water power on legal holidays, don't you? *A.* Yes, sir.

Q. The Holyoke Water Power Company doesn't shut off your water power on Sundays and compel you to run by steam? *A.* No, sir.

Q. And it does not shut off your water power on legal holidays and compel you to run by steam? *A.* No, sir.

Q. Could you take the fiscal years ending June 1, 1897 and 1898, and state from any records or memory how many days in each year you have been obliged to run this plant by steam? *A.* What years does that refer to, the last two years?

Q. I meant the years ending June 30, 1897 and 1898. *A.* I should say it wasn't over six days and nights in either of those years.

Q. That is, six different days, during part of which your water was shut off, or do you mean six times 24 hours? *A.* I mean six times 24 hours.

Q. Then the aggregate would not be over six times 24 hours, though there might be more than six different days? *A.* No, sir.

Q. Coming back to the Sundays again, don't you run your lights from 12, Saturday night, to dawn, Sunday morning? *A.* Yes, sir.

Q. And the power for that purpose has always been supplied by the wheels, by the water wheels? *A.* Yes, sir.

Q. Then you say that during the two years that I have asked you about you lost the use of your water power for about six days? *A.* Six days would cover it.

Q. Can you verify that statement by any record? *A.* I don't think I can.

Q. Are any records kept that would enable you to tell that? *A.* Not that I know of.

Q. Is it anybody's business to keep such records? *A.* No, sir.

Q. Wouldn't the gentleman whose name you mentioned as being one of the hydraulic engineers of the Company have records? *A.* No record of the steam plant.

Q. Wouldn't he have records of the times the water was shut off? *A.* Yes, records of all the times the water was shut off.

Q. But he would not know whether you were running by steam at that time? *A.* No, sir.

Q. And the best judgment you can give the Commission is that you lose the value of your water power about six days a year? *A.* Yes, sir.

Q. That is a fair average calculation? *A.* According to my judgment.

Q. Do you have to keep any extra force of men to run your steam plant? *A.* No, sir.

Q. If you had to start that steam plant up once a week, every Saturday to dawn, and then again Sunday evening, you would have to increase your force, wouldn't you? *A.* It might be policy to do so. We have an engineer and fireman on duty all the time.

By Mr. GREEN.

Q. How many men do you keep over there in the electric plant? *A.* Through the daytime I keep three men, and through the night two, all the time.

By Mr. MATTHEWS.

Q. What are the duties of those men? *A.* One dynamo man is always on the dynamo floor, and one fireman and oiler

below, and the engineer at any time during the twenty-four hours when we want him. He is there every day; and, if we want him at night, he is there.

Q. You wouldn't expect him to work all day and all night, too? *A.* He has done it.

Q. Occasionally? *A.* Yes, sir.

Q. You have to call on him only a few times in the year? *A.* Well, if it was going to be a regular thing every week, it might be policy to have additional help.

Q. It would be a necessity, wouldn't it? *A.* No, I don't think so. I don't think it would. You spoke of from twelve o'clock in the morning.

Q. Take Saturday and Sunday evenings, two nights in the week. If you ran that plant by steam two nights in the week and the rest of the week by water, wouldn't you have to increase your force of engineers and firemen? *A.* I think it might be policy to do so.

Q. You don't think it would be necessary? *A.* I think it might be better than without it.

Q. There is no question, as matter of fact, if you ran this plant five days or five days and a half by water and the rest of the time—the rest of the week, and every week in the year—by steam, you would, as a prudent business man and manager of this plant, increase your force, wouldn't you? *A.* I haven't given it any thought. It might be policy to do so.

Q. Coming back to boilers, Mr. Winchester, the Company has produced what purports to be the contract and specifications for the three tubular boilers of the type known as Manning boilers, signed by David F. Coghlan. That is the manufacturer? *A.* Yes, sir.

Q. And the Holyoke Water Power Company. No date on it. *A.* I never saw it before.

Q. I am unable to find any specification of the horse power at which those boilers are rated in that contract or specification. Haven't you made a mistake now about the rated horse power of those boilers? Isn't it 135 instead of 165? *A.* I should put it higher rather than lower.

Q. How do you get at the rated horse power of a boiler of that type? *A.* I am not a steam engineer.

Q. Then you wouldn't attempt to say really what the rated horse power of those boilers is, would you? *A.* No, sir.

Mr. BROOKS. Do you purpose introducing this contract in evidence?

Mr. MATTHEWS. No.

Mr. BROOKS. Then, when you are through with it, I will return it.

Q. How many tons of coal do you consume in a year?
A. About 100 tons.

Q. Now, coming up into the dynamo room, I wish you would explain to the Commission the different electric systems, or circuits, that you operate from that room, and the machines which serve the various circuits. Take your own time, and use your own language. *A.* We distribute here in the city four kinds of electric current, and of course we have to have four different kinds of dynamos to do the work with. We have the arc machines, from which the arc lamps are run all over the city, both municipal and commercial. We have the direct current incandescent machines, which furnish the incandescent lights below the first level canal in the city. We have the alternating current incandescent machine, which furnishes incandescent lights above the first level canal in the city; and we have the power dynamo which distributes power to the different small manufactories in the city. Do you wish me to go into it more fully?

Q. The machines in the northern part of the station, in the northern part of that room, are only for arc lighting, are they not? *A.* Yes, sir.

Q. And the large machine in the other half of the room is for the distribution of power, is it not? *A.* Yes.

Q. Then there is an alternating machine on the side of the building towards the canal, and there are two Edison direct current incandescent machines? *A.* Yes, sir.

Q. The alternating machine supplying incandescent lights, too? *A.* Yes, sir.

Q. Those four systems are distinct? *A.* Yes, sir.

Q. And you cannot use any one of these machines to supplement the others, can you? *A.* There are 16 machines.

Q. You can use the arc dynamos to help each other out?
A. Yes, sir.

Q. But you cannot use the two Edison direct current incandescent to help out the alternating machine or vice versa? *A.* No, sir.

Q. Nor either of the arc dynamos to help out your power machine? *A.* No, sir.

Q. And these four different sets of machinery all supply electricity by separate and distinct systems, don't they? *A.* Yes, sir.

Q. Having no connection with each other? Yes, sir.

Q. The result is, is it not, that, if anything should happen to your alternator, there is no other machine in the dynamo room or in your plant that would supply its place? *A.* No, sir.

Q. And the same is true of the dynamo used for power?
A. Yes, sir.

Q. And the same is true of the two machines which together operate the direct current Edison lamps, isn't it? *A.* Well, if those should break down, if the two Edison direct currents should break down, I could put a transformer in the station, and connect it with the alternator, and run the system from that.

Q. Those two Edison machines do not represent two different circuits? *A.* No, sir. They are both for the one circuit, a three-wire circuit.

Q. Have you got the sort of a transformer which you say could be used with the alternating dynamo in case the two Edisons should break down? *A.* I do not have it in the station.

Q. The Company doesn't own such a thing, does it? *A.* No, not of sufficient capacity to supply those machines.

Q. Can you use the arc dynamos, of which you have 16, haven't you? *A.* Yes, sir.

Q. (Continuing) indeterminately for the half arcs or full arcs, or must you use some for the full arcs and the others for the half arcs? *A.* We do use the half arcs entirely for the half-arc service. We can use the full arcs for the half-arc service, but not vice versa.

Q. The half-arcs are those supplied for the city use? *A.* Yes, sir.

Q. And how many machines have you for that purpose? *A.* 6.

Q. And what is their total capacity? *A.* 290.

Q. 290? *A.* Yes.

Q. Is that the total capacity of your half-arc machines? *A.* Yes, sir.

Mr. MATTHEWS. 290.

By Mr. GOULDING.

Q. 290 what? *A.* Arc lamps.

By Mr. MATTHEWS.

Q. And how many public half-arc lamps are you now supplying for the city of Holyoke? *A.* 256.

Q. 256? That is within 34 of the maximum capacity of those dynamos?

THE CHAIRMAN. What is a half-arc lamp?

Q. Well, Mr. Winchester, can you — Are you an electrical engineer, by the way? You said you were not a steam engineer: do you call yourself an electrical engineer? *A.* I pass for such in connection with this work.

Q. Does the Company employ any other engineer besides yourself? *A.* No, sir. The half-arc is simply an arbitrary term, as I understand it, for a candle power of about 1,200, and the full arc is for a candle power of 2,000.

Q. That is, the terms "full arc" and "half-arc" are arbitrary? *A.* Arbitrary.

Q. Commercial terms? *A.* Yes, sir.

Q. And that is true also of the candle power, isn't it? *A.* Yes, sir.

Q. 1,200 and 2,000? *A.* Yes.

Q. That is purely an arbitrary commercial term? *A.* In our contracts it tells the amount of current that we shall use on the streets, 9 amperes. 6 8-10 is usually considered the half-arc lamp.

Q. Well, don't you figure the electrical energy of your arc lamps by watts? You can state that to the Commission, can't you,—the number of watts required for a half-arc; and

that will give the electrical equivalent of these commercial terms? *A.* About 350 watts for a half-arc lamp, and 450 as we run them for a full arc lamp.

By Mr. GOULDING.

Q. What is a watt, by the way? *A.* It is the amount of electrical energy used in a lamp.

Mr. BROOKS. I didn't know but it was a blot on the scutcheon.

By Mr. MATTHEWS.

Q. In other words, you have now stated the exact difference in the light produced by the two machines, haven't you? *A.* Yes.

Q. As indicated by the electrical energy developed by the lamps. Now let us go on to the commercial arcs. Those are full arcs, I believe? *A.* Yes, sir.

Q. And how many of those do you run, and how many machines do you have to run them? *A.* We have ten.

Q. Machines? *A.* Yes, sir: not all running at any one time.

Q. What is the capacity of those ten machines? *A.* 290: eight 30-light machines and two 25-light. Does that make 290?

Q. Yes. Just the same as the other, isn't it? *A.* Yes, it happens to be.

Mr. GOULDING. What is the same as the other?

Mr. MATTHEWS. The maximum capacity of the full arc dynamos is 290, just the same as the others.

Q. How many commercial lights, full arc lights, are you supplying? *A.* I cannot answer that to-day. Somewhere in the vicinity of 170. We have just lost 17 by a fire the first of last month.

Q. You had more than 170, then? *A.* We had 184 the last time, I think.

By Mr. COTTER.

Q. When was that? *A.* I beg pardon?

Q. When was that, I say, that you had 184? *A.* Last fall.

By Mr. GOULDING.

Q. Up to the time of the big fire? A. Yes, sir.

By Mr. BROOKS.

Q. You mean the Windsor fire? A. Yes. It is impossible to keep track of the number: people are constantly ordering them in and out.

Mr. BROOKS. That was March of this year.

THE WITNESS. I wouldn't say that that 184 applied to that date.

By the CHAIRMAN.

Q. How many candle power are the store lights? A. 2,000.

Q. You have them more intense than the street lights, do you? A. Yes.

By Mr. MATTHEWS.

Q. You said that you have 170 of these commercial arcs now, and did have 17 more at one time? A. No: 184.

Q. You had what? A. We have about 170, and we had as many as 184.

Q. Exactly: you have only got 170 now? A. In that vicinity. I have not counted it up: it is changing all the time, every week.

Q. Now can you state to the Commission when these various machines were purchased? Take the 16 dynamos that are used for the arc lights. You brought some of them over from the old plant in 1891, didn't you? A. Yes, sir.

Q. How many of them were brought over then? A. I am not positive, but I think 11 of those on the floor there were brought over at that time.

Q. Eleven of the 16 belonged to the Holyoke Water Power Company before you moved in this building? A. Yes, sir.

Q. And how many of those 11 belonged to the Holyoke Electric Light and Power Company? A. I could not answer that. That takes it back four years more, doesn't it?

Q. Yes, I think so. A. I could not answer that off-hand.

Q. Well, half of them?

THE CHAIRMAN. You are only asked for your best recollection now.

Q. Only your best recollection, Mr. Winchester. *A.* Yes, sir, I should say —

Q. Have you got a list of the property that was taken over from the Holyoke Electric Light and Power Company for \$30,000? *A.* No, sir, I have no such list.

Q. Has the Company any such list in its possession? *A.* I could not say.

Mr. GREEN. I think it was here the other day, Mr. Matthews.

Mr. MATTHEWS. A memorandum of the property? If you have, Mr. Brooks, a list of property which the Company bought from the Holyoke Electric Light and Power Company, I wish you would produce it.

Mr. BROOKS. Mr. Winchester, have we such a list? The bill of sale was what you had in mind. (To Mr. Matthews.) That did not specify.

Mr. GREEN. I thought you had a schedule annexed to it.

Mr. BROOKS. It was simply a blanket bill of sale. No schedule was annexed, Mr. Green.

Mr. GREEN. All right. I was mistaken.

Mr. MATTHEWS. I would like to ask, Mr. Brooks, if you will ask one of the clerks to produce the voucher which accompanied that transaction. I saw that on Saturday last, and it seemed to me there was something of that sort. I will not be certain. A voucher for \$30,000.

Mr. BROOKS. Was there any voucher?

Mr. MATTHEWS. Yes, we had it on Saturday. Mr. Foster and I had it at the office.

Mr. BROOKS. Do you want it now? We will find it if you will say so.

Mr. MATTHEWS. Oh, no: we will not waste time about it now.

Mr. BROOKS. If you will keep it in mind, Mr. Matthews: I cannot remember it.

Q. Well, then, you took some of these machines,—you got some of them away back in 1887 from the Holyoke Electric Light and Power Company? *A.* Yes, sir.

Q. You think fully half of the eleven which the Company owned at the time that it built this station in 1891? *A.* Yes, sir.

Q. And the other five have been bought since? *A.* Yes, sir.

Q. What is the largest capacity of any of those machines?
A. Fifty arc lamps.

Q. And the smallest? *A.* 25.

Q. That is, they run from 25 to 50 each? *A.* Yes, sir.

Q. When your Company built this station in 1891, was any electrical engineer employed to install the plant? *A.* No, sir.

Q. Do you know whether the Company took any advice from any electrical engineer in regard to the matter? *A.* I don't know as I understand the purport of your question.

Q. Well, I am only asking for the fact,—whether you remember or know of your own knowledge that the Company did take advice from some electrical engineer when this plant was installed in 1891? *A.* I think there was no electrical engineer called in, any further than myself.

Q. Now at what dates were those five machines purchased which have been acquired by the Company since 1891? *A.* I think four years ago: I think they were purchased immediately following the last contract with the City, a three years' contract to furnish so many arc lights,—half-arc lights.

Q. You think they were all bought at that time? *A.* I think they were bought nearly at that time.

Q. What had been your experience in electric lighting prior to the installation of this plant in 1891? You had been with the Company since 1887, hadn't you? *A.* I had been with the Company since 1884,—since the first machine was started.

Q. Had you had anything to do with electric lighting for the Holyoke Water Power Company prior to 1887, when it bought the other company out? *A.* Yes, sir.

Q. What was your experience with the Holyoke Water Power Company before 1887, when it bought the other company out, with electric lights? *A.* No experience with the Holyoke Water Power Company.

Q. I misunderstood you, then. You meant for both companies? *A.* Yes, sir.

Q. That is, you were with the Holyoke Electric Light and Power Company? *A.* Yes, sir.

Mr. BROOKS. If you will allow me to interject a remark, Mr. Matthews, the Holyoke Electric Light and Power Company was owned by the stockholders of the Holyoke Water Power Company at one time.

Mr. MATTHEWS. I thought we should succeed in indicating as much.

Mr. BROOKS. I wanted to make certain that you did, that was all.

Mr. MATTHEWS. That will save a great deal of questioning. We will drop the subject right there.

Q. Now, coming back to your personal experience, had you had any knowledge of electric lighting prior to 1884?

A. No, sir.

Q. Was that the time when the Holyoke Electric Light and Power Company was established in this city? A. Yes, sir.

Q. You were employed by them from the outset? A. Yes, sir.

Q. Now how many of these arc dynamos did the Holyoke Electric Light and Power Company have when its plant was first installed in 1884? A. One.

Q. One; and the rest of the six or seven were bought during the four years following? A. As the business increased, yes, sir.

Q. Now will you tell the Commission when the two Edison direct current machines were installed,—or the one machine? A. They were both installed at the same time and started March 14, 1889.

THE CHAIRMAN. It is one machine, I believe.

THE WITNESS. They have to work together.

Mr. MATTHEWS. It is one machine.

Q. Those two dynamos were put in in 1889? A. Yes, sir.

Q. That is when you put in your Edison circuit? A. Edison system, yes.

Q. And that system has never been increased since? A. No, sir.

Q. How many lights do you run on that system? *A.* Well, off-hand, I should say 600.

Q. That is the capacity? *A.* No, sir.

Q. That is what you actually serve? *A.* What we serve.

Q. 600. Where are the incandescent Edison lights in the city, for the most part? *A.* The Edison? All below the first level canal. The Hotel Hamilton is the largest consumer we have.

Q. Are they in the shops? *A.* No, sir.

Q. Private houses? *A.* No, sir.

Q. In the mills? *A.* No, sir.

Q. Well, who are the consumers? *A.* You are speaking of the direct current?

Q. Yes. *A.* The Hotel Hamilton is the largest. The stores on Main Street, and this office.

Q. I said the stores: you misunderstood me. *A.* I thought you said the shops and mills.

Q. I meant the stores on the streets. That is, those 600 Edison lamps are in the stores on the streets, and to a great extent in the Hotel Hamilton? *A.* Yes, sir.

Q. Now tell us about the alternator. When was that procured? *A.* I am not so positive about the date. I think January, 1896, was when that started.

Q. Three years ago? *A.* Yes, sir.

Q. And you run a separate circuit of lights on that? *A.* Yes, sir. I will explain a little here. The whole incandescent system of the city was run by those two Edison machines up until the time that it took their full capacity: then we put in this alternator and divided our distribution system, so that everything on the hill above the first level canal was run by the alternator (there was the more probability of increase there), and everything below was still kept on the two Edison machines. So we used the same wires for the distribution of the alternator that we did for the direct current incandescent Edison.

By the CHAIRMAN.

Q. Well, how many of these lights do you run from the alternator,—as near as you can remember? *A.* Between 1,200 and 1,400.

By Mr. MATTHEWS.

Q. How many lamps do you supply from the alternator? *A.* Between 1,200 and 1,400.

Q. And are those 16-candles? *A.* Yes, sir. Well, there are a good many 8's, a good many 24's and one 100.

By the CHAIRMAN.

Q. How many candle-power are the Edison? *A.* Those are 16. That is, the base of it. We use some in hallways that run all night, 8-candle power.

By Mr. MATTHEWS.

Q. What is the average? You say all the Edisons are 16, aren't they? *A.* There are some 8's and some 24's.

Q. On the Edison? *A.* Yes, sir.

Q. What would the average be? *A.* 16.

Q. That is the average? *A.* Yes, sir.

Q. And the same is true for the lights supplied from the alternator? *A.* Yes, sir: 90 out of 100 are 16, and the rest are divided between 24, 8, and 32.

By Mr. BROOKS.

Q. And you said you had one 100? *A.* I have one of 100 on the circuit, that is all.

By the CHAIRMAN.

Q. You mean that if you turn on an ordinary light you get 16-candle power? *A.* Yes, sir.

By Mr. MATTHEWS.

Q. What do you call the other, the remaining machine, the large one? *A.* It is a 100 K. W. Edison bi-polar 500-volt generator.

By Mr. BROOKS.

Q. 500-volt what? *A.* Generator; the same term as dynamo.

By Mr. MATTHEWS.

Q. What do you supply from that? *A.* We supply

power for printing presses, coffee mills, paper-box manufacturers, ruling machines.

Q. Do you supply any lights from that machine? *A.* I think there are a few installed from that machine to run through the daytime.

Q. What is the load on that machine? *A.* That machine is 176 amperes.

By the CHAIRMAN.

Q. What? *A.* 176 amperes; or it has a rated capacity of 130 to 133 horse power.

By Mr. MATTHEWS.

Q. That is the capacity of the machine, is it? *A.* Yes. 176 amperes is taken right from the instrument on the switch-board.

By the CHAIRMAN.

Q. You can sell 130 horse power from that? *A.* Yes.

By Mr. MATTHEWS.

Q. How much do you sell? *A.* That is about what we sell.

Q. The equivalent of 130 horse power? *A.* Yes, sir, 130 to 133.

Mr. BROOKS. You mean the total of the horse power that they sell?

Mr. MATTHEWS. Yes.

Q. Have you any records enabling you to state the maximum, minimum, or average load on your electrical plant at the station? *A.* Electrically —

Q. Yes. *A.* Or power from the wheels? I have none electrically. I have no volt-meter that will measure any of these machines.

Q. Do I understand you to say that you have records which will enable you to tell the power required to run the machines from the wheels themselves,—from the water wheels? *A.* I have made up myself computations within the last six months from the water wheels, of what amount of power it took.

Q. Are those records of the wheels or computations of

yours from the records? *A.* Computations taken from the gates of the wheels at the time of the use—that they were in use.

Q. Taken from the gate records? *A.* Yes, sir.

Q. Who keeps those records? *A.* No one. I have a curve furnished me— By the way, all these four wheels were tested before they were put in there where they are now.

Q. In 1891? *A.* In 1891 they were tested, and each inch of gate means so many horse power through the test. Now I have a card furnished me with the gate from zero or 2 or 3 inches to full opening of the gate; and from those cards and the gate I get the power which each wheel is giving to the shaft.

Q. That is, this would be a computation of yours from this curve,— from the curve on this card? *A.* That is it.

(Mr. Matthews asked the witness to bring the cards to the next hearing, and the witness assented.)

Q. Your buildings have wooden roofs, haven't they? *A.* The roof boards are wood.

Q. Carried on iron trusses? *A.* Carried on iron trusses.

Q. Mr. Winchester, how much of the machinery under the dynamo room is used in connection with running the dynamo? *A.* It is all used at some period of the twenty-four hours, except, perhaps, 20 feet, which I could show you on this large plan here.

Q. It is not necessary to use it all at any one time, is it? *A.* Yes, sir.

Q. Was not some of the machinery put in to serve the street railway? *A.* No, sir, no part of it.

Q. Did you ever serve the street railway company? *A.* We did.

Q. (Continuing) supply the street railway with electricity from that station? *A.* We did for four years.

Q. Was not any of that machinery put in for them? You had machinery there, didn't you, which you sold to them? *A.* Yes, we had dynamos there which we bought afterward,

after the station was planned and built,— after it was planned and while it was building.

Q. Is not there a fly-wheel that is there for that purpose still? *A.* Yes, there is.

Q. You do not use that for this plant, do you? *A.* No.

Q. Just point that out to the Commission, please. *A.* We should use it if we put in more generators.

Q. You would? *A.* Yes, sir.

(The witness exhibited a plan to counsel.)

Q. This is the shafting plan, is it? *A.* This is the portion of the shafting of which he speaks. After the station was planned and before it was built, we made a contract with the street railroad to furnish them power. Power for street railways is very unsteady, and it jumps from nothing to 300 or 400 horse power. So I had a balance wheel put on to this end,— a heavy balance wheel.

Q. When you say "this end," you mean the south end? *A.* The south end, the lower end of this shaft. And that was used to store up energy, so that, when the load was suddenly thrown on, it would take care of it for a second or so till the gate could raise up and apply more power to the wheels. And that ran as long as we had those three or four railroad generators running, and was used to steady the power — the variation of speed — on that shaft.

Q. You have not used that part of this machinery since, have you? *A.* We have not used that part since. We run one machine: if we were putting two or three machines on that, it would be necessary to run that. It would not be necessary to run it, as I know of, but it would be advisable to run it on account of steadying it in throwing on and off a load; but our load is so steady that we do not use it and save the oiling. From there to there that shaft remains idle, and has since —

Q. When you say "that shaft," you mean — *A.* The southerly end of the easterly shaft. But there are pulleys on here to run the additional power generators on the floor above, which are all planned for.

Q. I understood you to say that you had no daily records from which you could compute the electrical output of the plant? *A.* No, sir.

Q. And I suppose you have no records from which you could compute or any one could compute the cost per electrical unit of operating the plant? (Witness hesitated.) Do I make myself clear? *A.* Yes, I understand your question, but I was thinking. We have no volt-meters that will read our arc machines. They run to 1,200 and 2,000 volts, and it would be necessary that the voltages on those machines should be taken into consideration.

Q. And you would have to keep records of them, too? *A.* We would have to keep records of them in order to do that. We can take the number of lights, the number of watts per lamp. We can estimate the wattage of the lines, and in that way we can make a fair calculation.

Q. Do you know how many hours your lamps are lighted in the year? *A.* No, sir.

Q. Can you make any estimate of that? *A.* Yes, sir. It is fixed by contract with the City. We light the street lamps half an hour after sunset, and they burn until a half-hour before sunrise.

Q. I mean the commercial lights. *A.* They are started one hour before sunset and run until half-past ten and eleven o'clock.

Q. All your commercial lamps? *A.* Yes, sir.

Q. Every night in the year except Sundays? *A.* You understand in this city the stores keep open either six nights — We have no right to furnish lights Sunday, I suppose, so we do not say seven nights. The fact is, the drug stores have the lights Sundays. The other stores are open some of them six nights, some four, and some three.

Q. That is, some of your customers use lights seven, nominally six nights; some of them are four; and others three? *A.* Yes; and the other nights these short three-night lamps run till half-past six.

Q. Have you records in your department where those facts could all be collated? *A.* No, sir.

Q. So as to ascertain the amount of work that your plant is doing? *A.* No.

Q. You could not do it. Then, if you cannot tell what the plant is doing, you, of course, cannot tell what it is costing you to do it? *A.* Why?

Q. Can you tell from any of your data how much it costs you to manufacture the electric current at this station per electrical unit? *A.* The Company keep books; and they can tell you to a cent what it costs to produce what we produce, tell also what we get for it.

Q. Do you know what you produce? Do you know the actual annual electric output of this plant? *A.* We never cared to know.

Q. And you do not know? *A.* No.

Q. And it must follow that you have not any means of ascertaining what that electrical output costs you per unit? *A.* We do not care.

Q. I asked whether you can or not? *A.* I think instruments could be brought here which we have not got.

Q. You would have to have instruments which you have not got and make estimates which you have not made? *A.* Yes.

Q. You cannot tell what it costs you to turn out electricity per kilowatt hour? *A.* No, sir.

Q. You have never made any attempt to do it? *A.* No, sir.

Q. And there is no way of finding out now? I mean to say, as to the past? *A.* No, sir.

Mr. MATTHEWS. I think that is all.

Re-direct.

By Mr. BROOKS.

Q. Mr. Winchester, whether or not the engines and boilers in your electric station have been used to any considerable extent? *A.* No, sir.

Q. And what is their condition now? *A.* First-class, so far as I know.

Q. What is your reason for not running condensing engines or compounding your engines? *A.* The Company thought it was not expedient to put the money that the compounding or condensing engines would cost above the present ones for the amount of time we were going to run them.

Q. That is, for the little amount of their use it would not pay to go to the large expenditure? *A.* No, sir, the saving in coal would not pay: the interest on the extra expense would be more than the saving in coal.

Q. Is there water for the condensation purposes? *A.* You see we only run those when the water is out of the canal: we would have to use city water.

Q. Exactly: so you would have no water for condensing,—the water out of the canal? *A.* No, sir, without buying it of the City, sinking wells and pumping in, putting in a cooling tower, or something of that kind.

Q. Now my friend asked you with reference to a cost per unit. Although you do not know exactly how much you produce of electricity, whether or not the Company's books will tell how much whatever you produce costs? *A.* Yes, sir.

Q. And how much it sells for? *A.* Yes, sir.

Q. Now at some time whether or not you will have to put in a new generator? *A.* I don't just understand that, Mr. Brooks.

Q. Is your need such that soon, if you continued the plant, you would have to put a new generator on? *A.* Yes, sir.

Q. Where would you put that with reference to the south end of your easterly shaft? *A.* I should put it south of the present generator, on the shaft that is now idle. There is no room on the others.

Q. That is the one that you have spoken of as having been used,—where your power was for the Holyoke Street Railway? *A.* Yes, sir.

Q. Do you know how many water wheels there are in the Cabot Street mill? Whether or not—my point is, whether or not there are enough water-wheels for the use of the Cabot

Street mill at the present time, or for any extension that may be put on it? *A.* There was enough to run the mill in its present shape, and our electric plant at the time we were there.

Q. And plenty of room on this land for another coal bin, if they desire it? *A.* Well, I never have been over the lines. I cannot tell exactly about that.

Q. You store your coal where? *A.* I store it in the east end of the boiler house, mostly.

Q. Of course, you do not do any heating of your mill in the summer? *A.* No, sir.

Q. So that the boiler that you use for heating in the winter is in disuse in the summer? *A.* Yes, sir.

Q. What season of the year is there any deprivation of water power? I don't know but you have already answered that question. I assumed you had. Mr. Waters thought not. *A.* What do you mean,—that the water is low?

Q. No: what times in the year are there that you do not use water power? *A.* The 4th of July shut-down is the only positive time that we know about.

Q. Do you draw the water of the canals in the winter? *A.* No, sir.

Q. Now, with reference to duplication of machinery, whether or not there are room and facilities there for duplication of the mechanisms that are there at the present time? *A.* You mean the dynamos, boilers, engines?

Q. Yes. *A.* Yes, sir.

Q. You had certain tests made of these engines, as I understand it? *A.* Yes, sir.

Q. Do I understand you to say whether or not you have a record of those tests? *A.* I do not think I have a record. I think there is a record in existence.

Q. Do you know whether or not Mr. Green has it? *A.* I think he has.

Mr. GREEN. Samuel Green.

Q. Not this Mr. Green? *A.* Mr. Samuel Green, I think, has it.

Q. Not a law engineer, but a hydraulic engineer; steam engineer. Whether or not, Mr. Winchester, your concern have made any special effort to fill the field of commercial lighting here? *A.* They have made no effort for the last year and three or four months.

Q. How much house lighting do you do? *A.* Very little.

Q. Well, about how much house lighting? *A.* 200 lights would cover it.

Q. And whether or not there is a large opportunity, large present opportunity, here for electric house lighting?

Mr. GREEN. Just a moment. If this comes in, this would come in, then, subject to the general objection on the principle that the possibilities of this case are objectionable. That is, I suppose this is being introduced to show what this plant might do if they had properly worked up their business.

Mr. BROOKS. That is correct, if you put it that way.

Mr. GREEN. We object to it.

Mr. COTTER. On what ground do you offer this evidence, Mr. Brooks?

Mr. BROOKS. To show the capacity of the plant, may it please your Honor, and the situation here that would call upon the exercise of the capacity of the plant. That is, we say that there is a present market, for instance, for house lighting and for power that they have not attempted to meet the requirements of. It seems to me it is quite material upon present market value.

Mr. COTTER. Well, Mr. Green, we will hear you.

Mr. GREEN. It is our contention that it cannot be an element of value in this case, in the first place, on lines that we have already outlined. We think that this is further objectionable on the ground that it deals with an element of possibilities and not with elements of fact. They are trying to show — it is a sort of Colonel Sellers's proposition — there are so many houses in town, and might be so many lamps in each, and so many people might be scared of candles, and we might get a certain result. And, to show where this Board is

coming out, we might perhaps want to show that we are too poor to hire lights. It seems to me it is all guess work.

Mr. COTTER. Colonel Sellers passed away before our time. I did not have the pleasure of his acquaintance.

Mr. GREEN. The name is somewhat famous, anyway. But it seems to me it is a question of future possibilities, and not to be taken into consideration.

Mr. GOULDING. A question of situation.

Mr. BROOKS. The present situation.

Mr. COTTER. It seems to us that the evidence is competent: the objection goes to its weight.

Mr. GREEN. Your Honors will save our rights on that question. We would like to reserve this question on other grounds than those that we have adduced and put forth.

THE CHAIRMAN. Of course, the witness must speak from his own knowledge, not outside of what he knows himself.

Mr. COTTER. We do not admit it for the purpose of showing good will or future value or anything of that kind, but, as bearing on its present value, we think it is competent; the objection goes to its weight.

Mr. GREEN. Our objection, of course, goes to this,—that what they are trying to adduce before this Court is not evidence of the value of the plant: it is evidence of the value of the business; and the City does not buy the business under this proceeding.

Mr. COTTER. No: we are not receiving it for that purpose, Mr. Green.

Mr. GREEN. Of course, so far as showing the value of the plant, we should claim this,—that it is absolutely inconsequential, because that machinery, that land, and that building are just as valuable for the City, if they are going to go into the electrical business here, if it was brand-new and never had been sold, as if it went with the business, because we do not take the business, we only take the plant.

Mr. COTTER. We do not admit it to show the value of the business or consequential value.

Mr. GOULDING. Simply, we offer it to show the value of the property by showing its relation to the public.

Mr. COTTER. We think it is competent.

Mr. GREEN. Your Honors will save our rights on that.

(The question was read by the stenographer: "And whether or not there is a large opportunity, large present opportunity, here for electric house lighting?")

A. There have been inquiries for electric lights in houses.

Q. From your knowledge of the situation, whether or not there are opportunities and a market for house lighting that you have refrained from?

Mr. GREEN. Of course, you will save us on this point.

THE CHAIRMAN. We do not consider that is competent. You can show the number of houses in town, the number of people living here, or anything of that kind bearing on this subject.

Mr. BROOKS. I purpose to go further, if I am permitted by the Commission, to show that there are demands made upon them which they have refused to fill because they did not care to go into that field.

THE CHAIRMAN. That is too vague, we think. He has already testified as to the number of lights to light private houses,—200, I think he said.

Mr. BROOKS. Yes, sir.

THE CHAIRMAN. You can show the number of houses and the number of people, and that sort of thing; and from that you can argue, of course, that there are demands, more or less.

Mr. BROOKS. My inquiry went more especially to this: that, since the City voted to take it, there has been a continuous demand upon them for house lighting, and they have refrained from engaging in it because of the peculiar situation they were under.

THE CHAIRMAN. You have already shown that you have refrained from engaging in it. You have already shown, as I understand it, that you have refrained. You can do that. You have done it.

Mr. BROOKS. I don't care to go into specific instances at all.

THE CHAIRMAN. I don't think general instances are competent.

Q. Whether or not you have refrained from filling the market, or the demands for house lighting, since the City passed the vote necessary for the taking of the plant? You need not answer that till the Commission passes on it. *A.* I say we have.

Mr. GREEN. Wait a minute.

THE CHAIRMAN. He has already testified he has, so that I don't know that we need —

Mr. BROOKS. Well, perhaps he did. It has passed from my memory, though. If it is understood that he has already testified to that, I do not want to repeat it, of course.

Q. And whether or not the same is true of the distribution of electrical power?

Mr. GREEN. Of course, that would be subject to the same objection on our part.

A. Yes, sir, it is true.

Mr. GREEN. Just a minute. That answer should not be taken. The Court told us to wait.

THE CHAIRMAN. What time do you refer to in your question?

Mr. BROOKS. Since January, 1898.

THE CHAIRMAN. That is to say, up to the present time?

Mr. BROOKS. Yes, sir.

THE CHAIRMAN. Inasmuch as it is doubtful as to the time that we shall put this valuation, it seems to me that you can show as a fact that you have so done.

Mr. BROOKS. Yes, sir. Well, he answered the question in the affirmative, and I suppose his answer may stand.

THE CHAIRMAN. We will try to make proper application of the evidence later.

Mr. GREEN. The witness answered that question while the Court was considering its admissibility. Our rights will be saved on that?

THE CHAIRMAN. Certainly.

Mr. GREEN. I should like to have an exception saved.

(The stenographer read the question and answer last preceding by direction of the Commission.)

THE CHAIRMAN. That is, that you have not made an attempt —

MR. BROOKS. We have refrained from any efforts to sell electrical power.

THE CHAIRMAN. Since January, 1898.

MR. BROOKS. Yes. That is, any attempts to extend the sales.

Q. And whether since that time you have made any attempts to extend your sale of domestic lighting generally?

MR. GREEN. That, of course, is subject to the same exception.

A. No, sir.

THE CHAIRMAN. Please understand, gentlemen, that in admitting that testimony, if we fix the date of the sale as prior to that time for any reason whatever, of course this evidence becomes of no consequence. Let me add also that, if, upon examination, we think the evidence is incompetent, of course we will exclude it, and let you know.

MR. BROOKS. If your Honors should finally determine the opposite of what you seem to be determining now, you will be kind enough to save our rights.

THE CHAIRMAN. Of course.

MR. GREEN. You will save my exception to that last question and answer.

Q. And whether or not up to January, 1898 — I will confine it to that — the electrical business had increased from year to year? A. Yes, sir.

Q. At the time that these buildings were constructed and your plant installed, in the year 1891, you had then been engaged in the electrical business for about seven years? A. Yes, sir.

MR. BROOKS. And I don't know as anybody had been engaged much longer. I will leave it there. That is all I care to inquire.

Re-cross.

By Mr. MATTHEWS.

Q. Mr. Brooks asked you whether there would be plenty of

room for the coal bin somewhere else, if the Company was unable to use the present one by reason of not owning the land upon which the bin was situated. Could you point out any other place on this map, within the limits which are to be conveyed to the City, that you could use for a coal bin?

Mr. GOULDING. I object to that question, not perhaps on any material ground, because I don't know what Brother Matthews means, but we hope it is not to be considered as exactly what we offered the City that is to be conveyed to the City. This Commission is to decide what is to be conveyed, that they own, as part of that plant; and you can say that piece of land belongs to it, if you want to.

Mr. MATTHEWS. That raises an interesting question.

Mr. GOULDING. I only wanted to —

Mr. MATTHEWS. Such is not our understanding of the law. Our understanding of the law is that the Commission has jurisdiction to say which or what portions of the property offered by the Company shall be conveyed by it, and purchased by the City; but we do not understand that the Commission has power to compel the Holyoke Water Power Company to convey to us any land, building, or property which it has not offered to sell.

Mr. GOULDING. The statute is entirely conclusive, as I submit, that the Company has got to convey and the City has got to take the plant, to begin with; and what is the plant would be a question, perhaps, of mingled law and fact; but I have no doubt that it would not be determined by any lines that the Company might run in their offer to the City.

Mr. BROOKS. Perhaps they might leave out some of the machinery. Would the city be concluded by that?

THE CHAIRMAN. That is an interesting question.

Mr. MATTHEWS. We should accept Mr. Brooks's suggestion that the Commission would not be concluded by a description of the machinery. I think that was settled in the Wakefield case.

Mr. BROOKS. We say the same is true now.

Mr. MATTHEWS. In respect to land, we should assume the

Commission would have no power to order the conveyance of more than is offered. This question is, however, competent on either theory.

THE CHAIRMAN. You can put the question.

(The question was read by the stenographer.)

A. I have not familiarized myself with the lines as they have drawn them.

THE CHAIRMAN. Let the engineers testify to that.

THE WITNESS. Yes, they drew the lines; and I have not familiarized myself with them.

THE CHAIRMAN. Let the engineers testify to that; that is, if that is satisfactory. He is not familiar with the lines and prefers to leave this matter to the engineers.

Adjourned to meet at the Court House, Springfield, on Tuesday, April 11, at 9.30 A.M.

FIFTH HEARING.

SPRINGFIELD, Tuesday, April 11, 1899.

The Commission met in the Court House at 9.30 o'clock A. M.

THE CHAIRMAN. You made an offer to put in the entire valuation and profits of the Holyoke Water Power Company. If you will put down in writing just exactly what you desire to show, and on what principles you proceed, we will look it up.

Mr. MATTHEWS. We did not press the matter yesterday, because we thought it might be premature. We may have to lay further foundation for it.

Mr. COTTER. It struck my mind it was early, if competent at all.

Mr. MATTHEWS. We may have to back it up with other facts. We will state our reasons in writing, when we do offer it.

SAMUEL B. WINCHESTER, *cross-examination resumed.*

By Mr. BROOKS.

Q. Just a word, Mr. Matthews, before you proceed. Mr. Winchester, I believe there is something you desire to correct in the testimony which you gave yesterday? A. Yes, sir.

Q. What was that? A. I think the question asked was whether the station was built by contract or by the day, and my answer was by the day. I wish to qualify that by saying it was built partly by the day and partly by contract.

By Mr. MATTHEWS.

Q. You said yesterday that you had computed from time to time the loads, *i.e.*, the power developed by the water wheel and actually used to run the electric light and power machines? A. Yes, sir.

Q. What maximum power do you find used for that purpose, as indicated by the water wheels? A. 552.

Q. What? *A.* Horse power.

Q. 552 horse power is the maximum load on your electric light and power machinery, the maximum power required to run it? *A.* The maximum that I have found.

Q. That would be between five and six in the evening of some winter day? *A.* Yes, sir, a day in January.

Q. A dark day? *A.* A day when we had our heaviest load. We have heavier loads three nights in the week than we have the other three nights, and this was one of those three nights.

Q. You took some afternoon in January when the heaviest load was on the machines? *A.* Yes, sir.

Q. And found 552 horse power? *A.* Yes, sir.

Q. How would that compare with the amount required to run the machinery in the day time? *A.* I think that runs about 150.

Q. 150 horse power? *A.* Yes, sir, as a maximum from the generator. The generator develops 133 horse power. The residue is taken by the friction of the shafting, wheels, bearings.

Q. You run no lights during the daytime, do you? *A.* We run a few, as I said yesterday, but two or three horse power would cover it.

Q. You do not run the incandescent and arc machines in the daytime? *A.* No, sir.

Q. All you run is this 500-volt-power generator? *A.* Yes, sir.

Q. And you say it takes about 150 horse power to run that, including the surplus? For what purpose I did not quite understand. *A.* You asked me if there were any incandescent lights, and I said there are a few run from this 500-volt circuit.

Q. No, that is not my question. What does this 150 horse power run? *A.* 133 is used to run the generator.

Q. And the surplus? *A.* Is taken up in the friction of the shafting and belting.

Q. You do not run that all the time during the day? *A.* No, sir.

CONFIDENTIAL

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

2. Once the problem is identified, the next step is to define the objectives and goals of the project. This helps to clarify what needs to be achieved and provides a clear direction for the team.

3. The third step is to develop a plan or strategy to address the problem. This involves breaking down the problem into smaller, manageable tasks and determining the resources needed to complete each task.

4. The fourth step is to implement the plan. This involves putting the strategy into action and monitoring progress to ensure that the project is on track.

5. The final step is to evaluate the results of the project. This involves assessing the outcomes against the objectives and goals and identifying any areas for improvement.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

[illegible]

1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

1. The first step in the process of the investigation is the identification of the problem. This is done by the investigator who is responsible for the study. The investigator must first identify the problem that he or she is studying. This is done by the investigator who is responsible for the study. The investigator must first identify the problem that he or she is studying.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

SECRET

1. The first of these is the fact that the United States is a free country. We have a free press, a free speech, and a free assembly. We have a free market, a free trade, and a free movement of goods and services. We have a free people, a free will, and a free choice. We have a free life, a free love, and a free death. We have a free world, a free peace, and a free future.

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1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

[illegible][illegible]

1. The first volume of the "History of the County of York" is now in the hands of the printer.

can't remember now where I did get it. I never saw the plans of it.

Q. Isn't there a plan or map in the office of the Holyoke Water Power Company at Holyoke showing a proposed extension of the Cabot Street mill built over and upon this tail-race? *A.* Not that I know of.

Q. Have you any record of the number of restricted days during which the surplus or non-permanent water power of the Holyoke Water Power Company is not available to ordinary tenants or purchasers? *A.* I have no record. I have heard it stated.

Q. And such records are kept somewhere by somebody? *A.* Yes, sir.

Q. In whose charge would they be? *A.* I think that the steam engineering experts of the Company will answer that question.

Q. My question is, who keeps the records, if there are any kept? *A.* The hydraulic engineer.

Q. What is his name? *A.* A. F. Sickman, assistant hydraulic engineer.

Q. The same gentleman who keeps the record of the water used in these wheels? *A.* Yes, sir.

Re-direct.

By Mr. BROOKS.

Q. What do you mean by "daytime"? You speak of 150 horse power during the day. Between what hours? *A.* It is between 7 o'clock in the morning and the time we start for lighting up in the evening, which varies with the season of the year.

Q. Well, what are the hours? Take it in the winter time? *A.* About 7 to 3 in the afternoon.

Q. That is, what you mean by daytime is, in the winter time, from 7 o'clock to 3 o'clock in the afternoon? *A.* Yes, sir.

Q. You say 552 horse power is the maximum, so far as you observed, of power necessary to make your required production? *A.* Yes, sir.

Q. And whether or not that is of frequent occurrence, that you need 552 horse power? *A.* I think that would occur three times a week during the winter.

Re-cross.

By Mr. MATTHEWS.

Q. Just one question, Mr. Winchester. Your commercial business starts up about dark in the afternoon, doesn't it, for lighting? *A.* Yes, sir.

Q. And that would be from 3 to 4 o'clock in the winter? *A.* It would be about 3 o'clock.

Q. About 3 o'clock in the winter, and what time in the summer? *A.* About 6. Our average starting time for commercial lights is one hour and a quarter before sunset.

Q. That is the average time? *A.* That is the average time. If it is a dark day, we modify that by starting earlier.

Q. Then when does the commercial business run out in the evening? *A.* 11 o'clock.

Q. 11 o'clock? *A.* Yes, sir.

Q. You don't carry a constant load on your machinery, at the same amount, from dusk to 11, do you? *A.* No, sir, no electric light station does. The lights begin to drop off when the offices begin to close at 6 o'clock.

Q. Your commercial business starts up on an average an hour and a quarter before dusk, but begins to fall off about 6? *A.* Yes, sir.

Q. And gradually drops off to nothing at 11? *A.* Yes, sir.

Q. Then you have no commercial business, for lighting, from 11 P.M. until the next afternoon, until an hour before sunset the next afternoon? *A.* I wish to qualify my answer that we stop at 11, in this way. I was thinking of the arc lights. Our incandescent lights run till daylight in the morning, in hotels and hallways, etc.

Q. Well, a small proportion of your electric lights? *A.* Yes, sir.

Q. Are run through the night? *A.* Yes, sir.

Q. But the bulk of them you close down before midnight?
A. Yes, sir.

Q. The street lamps are lighted from dusk to daylight, aren't they? *A.* One-half hour after sunset, and extinguished one-half hour before sunrise, taking the Robert B. Thomas Farmer's Almanac as a guide.

Q. That gives an average of about 10 hours for the year?
A. I think it is 11: it is 4,000 hours.

Q. 4,000 hours for the year? *A.* Yes, sir.

Q. That is, there is a constant load on the dynamos supplying the public lights for an average of between 10 and 11 hours a day? *A.* Yes, sir.

Mr. MATTHEWS. That is all.

By Mr. BROOKS.

Q. Mr. Winchester, do you furnish lights for the mills in the city of Holyoke? *A.* No, sir.

Mr. BROOKS. That is all.

PRESENT STATUS OF THE PLANTS.

William W. Randolph was called and took the witness stand.

Mr. COTTER. Gentlemen, before you proceed with this witness, I wish to ask one question. I understand that the Company has retained the possession of this gas and electric lighting plant up to the present time,—retains the possession and the management.

Mr. BROOKS. Yes, sir.

Mr. COTTER. Has the City been paying up to the present time for the street lighting?

Mr. BROOKS. I think so, yes, sir.

Mr. COTTER. Paying the Company?

Mr. BROOKS. Yes, sir.

THE CHAIRMAN. Things have been going on, then, practically just the same as they were.

Mr. BROOKS. Substantially the same, with the exception that the Company has been making no endeavor to increase its business or to make extensions.

Mr. GOULDING. Of course there may be a question — I presume there will be — about when this sale takes effect under the statute.

Mr. COTTER. As bearing upon that, and as to the admissibility of evidence, it occurred to me that I would like to make the inquiry at this time.

Mr. GOULDING. Of course, as a matter of fact no transfer of any part of the property has yet been made.

Mr. COTTER. No.

Mr. GOULDING. There has been no delivery or anything of that sort, no change in the possession at all.

Mr. COTTER. But the parties' methods, their understanding and way of dealing with the property, may throw some side light upon the questions involved.

WILLIAM W. RANDOLPH, *sworn*.

By Mr. BROOKS.

Q. Your full name, Mr. Randolph? A. William W. Randolph.

Q. Of what place are you a resident? A. New Rochelle, N.Y.

Q. Where is your business? A. New York City.

Q. What is your business or profession, Mr. Randolph?
A. Mechanical engineer.

Q. Educated in a technical school? A. Educated at Stevens Institute, and graduated in 1886.

Q. And since 1886 what has been your profession? A. For four years I was in railroad life, construction work of different kinds; and for the past nine or ten years I have been employed in constructing and designing gas works and machinery.

Q. You have been employed for nine or ten years in the constructing and designing of gas plants and machinery. With reference to the purchase of machinery, what have you had to do? A. I have bought,—done the buying and selling for our firm for the past five years.

THE CHAIRMAN. A little louder, Mr. Randolph: this is a pretty hard room to hear in.

Mr. BROOKS. He has done the buying and selling for his firm for the past five years, as I understand you?

THE WITNESS. Yes.

Q. And what firm is that? A. Humphreys & Glasgow.

THE CHAIRMAN. What?

Mr. BROOKS. Humphreys & Glasgow, of New York.

THE CHAIRMAN. Oh, yes. That is the same gentleman we had here the other day?

Mr. BROOKS. Yes, Mr. Humphreys.

Q. And in the last five years with how many plants have you been connected in the capacity that you speak of? A. I do not think I could say off-hand.

Q. Well, whether many or few? A. I have been connected in a consulting capacity or otherwise with quite a number. We have erected work in Holyoke, in New York City, in Newburg, N.Y., and St. Joseph, Mo., and a number of other places we have had work at.

Q. And whether or not you know the value of gas machinery and the value of mains and meters and services and the various mechanisms that go to make up a gas plant? A. A considerable part of my work consists of valuing plants for the purpose of purchase.

Q. And were you called upon by the Holyoke Water Power Company to make an examination of the gas plants in Holyoke and to place a valuation upon the various parts and parcels that go to make up the whole? A. I was assigned to that work by Mr. Humphreys, who was called upon by the Holyoke Water Power Company.

Q. And have you made such a valuation and such an examination? A. I have.

Q. Whether or not your examination was extended and thorough or otherwise? A. I think it was.

Q. When was it that your examination was made? A. It was made about six weeks ago: the exact date I have not got. I made a number of trips to Holyoke, and the examination extended over quite a little period.

Q. Well, about how much in all? *A.* I should say it extended over a period of three weeks.

Q. Well, now, will you be kind enough to state to the Commission the various mechanisms that you valued and the valuation that you placed upon each?

Mr. MATTHEWS. Mr. Chairman, I suppose the Court will not desire us to take up time in cross-questioning the witness as to his qualification and experience at this point. We reserve that for cross-examination. I suppose it is a matter largely directed to the weight of his testimony. But we should like to make a formal objection at this point to any value placed upon this property as of a date so recent as six months ago. I do not know that the Commission desires to hear an extended argument upon that point now. Our theory of the law is—we admit it is open to doubt, but our contention will be—that this plant must be valued in its entirety as of either the date when the schedule was filed or as of a date thirty days from the second vote,—one of the two: they were both close together, within ten days, I think, in January, 1898. We rather think that the time when the schedule was filed would fix the rights of the parties within the decision in the Hudson case, and therefore fix the time of the valuation.

Mr. BROOKS. Well, do I understand that your thought is that it may have increased in value since by use?

Mr. MATTHEWS. It may or it may not be. It may have diminished: it probably has diminished in some respects and increased in others.

THE CHAIRMAN. We of course do not undertake to determine now the date when the sale is fixed, but we think this evidence is competent.

Mr. MATTHEWS. The Court will see that our rights are saved as to the point of time.

THE CHAIRMAN. Certainly.

Mr. BROOKS. I will change my question.

Q. What do you find to be the total value of the property which you examined and upon which you placed a value?

Mr. MATTHEWS. Is that the gas works,—the whole?

Mr. BROOKS. I am going to ask him for the totals, and then I am going into the details.

A. Including the real estate, the value of which I have taken from other parties, I find the value to be —

THE CHAIRMAN. You had better exclude the real estate.

THE WITNESS. I will have to make some additions and subtractions.

Mr. BROOKS. It could be taken in as a part of his figures, and we will furnish the testimony hereafter that goes to make up the valuation.

THE CHAIRMAN. Very well.

Mr. GOULDING. We shall certainly show what he values.

Mr. MATTHEWS. It is understood that rule applies to both sides?

THE CHAIRMAN. Certainly.

A. \$340,227.52.

Mr. COTTER. That includes the real estate?

Mr. BROOKS. Yes, your Honor.

Q. That is, upon the real estate you place no independent valuation? A. I do not feel competent to value real estate in Holyoke.

Mr. BROOKS. Exactly.

By the CHAIRMAN.

Q. Have you included the real estate in your valuation of the plant or excluded it in your \$340,000? A. I have included it.

Mr. COTTER. The value given by somebody else.

THE CHAIRMAN. All right. I understood it that way, but the last answer left it uncertain.

By Mr. BROOKS.

Q. Now whether or not, leaving out the real estate, the valuation that you have placed upon the property that you have valued was the fair market valuation? A. The value placed is, to the best of my judgment, the fair market value of the working plant.

Q. In your figures, \$340,227.52, how much is included for real estate? A. \$50,153.40.

Q. In the real estate do you also include the buildings?
A. That is for real estate alone.

Q. Does that include the buildings? *A.* It does not.

THE CHAIRMAN. He has stated that separately.

Mr. BROOKS. So that his answer may be qualified in that respect.

Q. Will you be kind enough to state, beginning where you began, the various pieces of personal property that you valued and your valuation therefor? *A.* Gas holders, holder tanks, one single lift holder —

THE CHAIRMAN. You might have the schedule printed; and, if you wish to examine specifically, you can do so.

Mr. BROOKS. We are not in any condition to get any schedule printed. Mr. Randolph appears here only this morning. While I would be very glad to shorten it, we cannot very well do it.

THE WITNESS. Shall I proceed?

By Mr. BROOKS.

Q. Yes, sir. *A.* One single lift holder, 60 ft. x 20 ft., capacity 60,000 cu. ft., about \$3,000.

Q. What do you mean by about? Does the word "about" refer to the 60,000? *A.* I want to qualify the 60,000 feet capacity.

Q. Very well. *A.* One brick holder tank, \$8,000.

One brick holder house, 63 ft. x 19 ft. 6 in., \$3,600.

Total \$14,600.

One double lift holder, 63 ft. x 38 ft., capacity about 115,000 cu. ft., \$5,700.

One brick holder tank, 60 ft. x 21 ft., \$8,640.

One brick holder house, 73 ft. x 43 ft., \$6,080.

Total, \$20,420.

One holder, 87 ft. x 26 ft., capacity about 150,000 cu. ft., \$6,500. That is the outlying holder.

One brick holder tank, 89 ft. x 26 ft., \$16,000.

One holder house, 100 ft. x 34 ft., \$7,500.

Total, \$30,000.

Total holders, \$65,020.

Machinery. Four purifier boxes, 15 ft. x 20 ft., connections and foundations, \$7,080.

Two station meters, capacity 500,000 cu. ft. each per day, connections and foundations, \$4,700.

One No. 5 Mackenzie exhauster, connections and foundations, \$935.

One No. 6 Mackenzie exhauster, connections and foundations, \$1,060.

Exhauster counter-shafting and belting, \$75.

One rectangular combined condenser and tar extractor, 5 ft. x 13 ft. 9 in. x 12 ft. 6 in., foundations and connections, \$1,000.

One condenser, 6 ft. 8 in. x 20 ft. 3 in., foundations and connections, \$2,150.

One standard scrubber, 6 ft. 3 in. x 8 ft. 6 in., counter-shaft, belting, foundations and connections, \$3,050.

Two 125 horse power Manning boilers, steam piping, foundations and connections, \$2,500.

Two stacks of coal gas benches, containing 10 benches, 6 retorts each, two benches are not filled with retorts, the iron work is complete for 9 benches, present capacity about 400,000 cu. ft. per day, \$18,000.

One water gas apparatus, rated capacity about 650,000 cu. ft. per day, complete, including iron operating floor, hydraulic elevator, blowing plant, and foundations, \$12,100.

One coal conveying plant for taking coal from railroad tracks and delivering it into coal shed, including pit under tracks, rated capacity 40 tons per hour, \$2,500.

One 12-inch water wheel and pit, \$500.

One 15 horse power vertical exhauster engine and steam pipe, \$250.

One 10-light dynamo, wiring and connections, \$100.

Two sets of closets, bath tubs, and lockers, \$150.

One 12-inch governor and by-pass connections, \$550.

Q. Is that an automatic governor? A. Yes. Office furniture, photometer and gauges, \$700.

Coal buggies, tools, and tackle, \$950.

One horse, one buggy, one sleigh, harness, and blankets, \$250.

Total value of machinery, \$58,600.

Tar, oil and ammonia tanks and wells :—

One brick tar well, 23 ft. x 11 ft. 6 in., \$700.

One brick tar well, 8 ft. x 6 ft. x 10 ft., \$140.

One brick tar well, 49 ft. x 14 ft. x 8 ft., \$1,140.

One brick tar well, 20 ft. x 29 ft. x 12 ft., \$1,010.

One steel oil tank, 50,000 gallons capacity, including foundations, \$2,700.

One iron oil tank, 5 ft. x 20 ft., capacity 2,900 gallons, underground; \$200.

One iron oil tank, 7 ft. x 23 ft., capacity 6,500 gallons, underground, \$300.

One iron ammonia tank, 7 ft. x 23 ft., capacity 6,500 gallons, underground, \$300.

Q. What is the total for tanks and wells? *A.* \$6,490. Yard connections: oil, water and drain pipe at works, 765 ft. of 16-in. pipe, \$1,721.25.

Q. At how much? *A.* \$2.25.

Q. Per foot? *A.* Per foot. 850 ft. of 12-in. pipe at \$1.50 per foot, \$1,275.

640 ft. of 6 in. at 80 cents, \$512.

465 ft. of 4 in. at 50 cents, \$232.50.

210 ft. of 2½ in. at 40 cents, \$84.

Total yard connections, \$3,824.75.

Street mains, including mains and paving, or cost of paving, over the mains.

Mr. GOULDING. What is that word?

THE WITNESS. Paving. 14,516 lineal ft. of granite block.

3,817 lineal ft. of block asphalt.

560 lineal ft. of tar asphalt.

3,714 lineal ft. of brick.

4,604 lineal ft. of macadam.

Total, 27,211 lineal ft. of paving, over street mains, at 30 cents per lineal foot, \$8,163.30.

Q. Well, will you proceed? *A.* Street mains. 440 lineal ft. of 16-in. main at \$1.60, \$704.

10,475 ft. of 12 in. at \$1.15, \$12,046.25.

5,964 ft. of 8 in. at 80 cents, \$4,771.20.

32,033 ft. of 6 in. at 60 cents, \$19,219.80.

28,781 ft. of 4 in. at 40 cents, \$11,512.40.

68,219 ft. of 3 in. at 30 cents, \$20,465.70.

1,953 ft. of 2½ in. at 20 cents, \$390.60.

7,895 ft. of 2 in. at 17 cents, \$1,342.15.

2,824 ft. of 1½ in. at 15 cents, \$423.60.

6,776 ft. of 1¼ in. at 12 cents, \$813.12.

3,127 ft. of 1 in. at 10 cents, \$312.70.

Total lineal feet, 168,487.

One bridge over the first level canal, \$550.

THE CHAIRMAN. Has he got the total of the pipes,—all the piping? 168,000 feet, he says. How much does it all amount to? Have you got it?

THE WITNESS. Making a deduction, I can give it to you. The total for the pipe, exclusive of the cost of paving over the pipe, is \$72,001.52. The total of mains, including bridge, is \$72,551.52. Total mains and paving, \$80,714.82.

Meters, 2,140 3-light meters at \$7.50 list price, \$16,050.

89 5-light at \$9.50, \$845.

84 10-light at \$12, \$1,008.

Q. You mean \$12 list? A. \$12 list. That is the list price.

By the CHAIRMAN.

Q. What do you mean by "10-light"? I do not understand it? A. That is the nominal size of the meter, and it is the size by which it is known in the trade.

THE CHAIRMAN. Yes: we would like an explanation of that.

Mr. BROOKS. If your Honors will be kind enough to make any suggestion at any time, we will have them go into it.

THE WITNESS. Does that cover the point?

By the CHAIRMAN.

Q. You are giving us a list of "10-light" meters. Now I do not have the slightest idea what you are talking about.

A. That is a trade name for a given size of meter, a meter that will supply so many cubic feet.

Q. And those you found on the premises? *A.* I have not counted them myself, but I have taken it from a list furnished by the gas company, which material they certify to have.

Q. Yes, all right. *A.* I have not listed the meters myself.

Q. You simply valued them? *A.* I valued them. The last I gave you was \$1,008.

42 20-light meters at \$16.50 list, \$693.

30 30-light meters at \$22.50 list, \$675.

25 45-light meters at \$33 list, \$825.

10 60-light meters at \$45 list, \$450.

4 80-light meters at \$62 list, \$248.

8 100-light meters at \$75 list, \$600.

8 150-light meters at \$115 list, \$920.

7 200-light meters at \$160 list, \$1,120.

1 250-light meter at \$225 list, \$225.

7 300-light meters at \$275, \$1,925.

1 400-light meter at \$325, \$325.

2,457 meters set, list price \$25,909, less 25 per cent. discount, \$6,477. Balance, \$19,432, the value of the meters which are set in consumers' houses.

74 3-light meters in stock at \$7.50, \$555.

20 5-light at \$9.50, \$190.

6 10-light at \$12, \$72.

2 20-light at \$16.50, \$33.

6 30-light at \$22.50, \$135.

1 45-light at \$33, \$33.

1 300-light at \$275, \$275.

110 meters in stock, list price \$1,293, less 30 per cent. discount, \$387.90.

Value of meters in stock, \$905.10.

Total value of meters, \$20,337.10.

2,000 services at \$10 each, \$20,000.

Stock of pipe on hand, and specials:—

62 ft. of 16-in. pipe at \$1.20, \$74.40.

53 ft. of 15-in. at \$1.10, \$58.30.

1,060 ft. of 12-in. at 76 cents, \$805.60.

2,603 ft. of 6-in. pipe at 33 cents, \$858.99.

534 ft. of 4-in. pipe at 19 cents, \$101.46.

976 ft. of 3-in. pipe at 13 cents, \$126.88.

22,333 pounds of cast iron fittings at $2\frac{1}{2}$ cents, \$558.32.

4 3-in. gate valves at \$6.50, \$26.

1 4-in. gate valve at \$8.50, \$8.50.

9 8-in. gate valves at \$21, \$189.

223 ft. of $\frac{1}{4}$ -in. pipe.

By Mr. Brooks.

Q. What kind of pipe?

A. Wrought iron pipe. 368 ft. of $\frac{1}{2}$ -in. wrought iron pipe.

6,183 ft. of 1-in. pipe.

4,705 ft. of $1\frac{1}{2}$ -in. pipe.

86 ft. of $2\frac{1}{2}$ -in. pipe.

111 ft. of 6-in. pipe.

377 ft. of $\frac{3}{8}$ -in. pipe.

1,987 ft. of $\frac{3}{4}$ -in. pipe.

4,530 ft. of $1\frac{1}{4}$ -in. pipe.

2,839 ft. of 2-in. pipe.

10 ft. of 3-in. pipe.

66 brass cocks.

Total value of above list, \$1,050.

30 clay retorts, 15 in. x 30 in. x 9 ft. 3 in., \$780.

Value of pipe and specials—

Q. What is the total of this? *A.* \$4,637.45.

Buildings. One office building 30 ft. x 20 ft. x 13 ft. to the eaves, with cellar, brick walls, slate and wood roof, \$1,400.

One building, 20 ft. x 114 ft. x 17 ft. to the eaves, 8-ft. basement, slate and wood roof, containing old station meter and lime room; and new station meter room, 25 ft. x 20 ft. x 24 ft. to the eaves, with slate on wood roof, and valve room 11 ft. x 10 ft. x 12 ft. to the eaves, slate on wood roof, all brick walls, \$3,400.

One building containing condensers and purifiers, 28 ft. x 144 ft. x 18 ft. to the eaves, basement, slate and wood roof, brick walls, \$5,200.

One building containing retorts and boilers, 63 ft. x 75 ft. x 22 ft. to the eaves, bluestone flag paving, slate and iron roof, brick walls, \$7,650.

One building containing water gas plant, 63 ft. x 51 ft. 6 in. x 27 ft. to the eaves, brick paving, slate and iron roof, brick walls, \$3,950.

One building containing engine and blower, 22 ft. x 30 ft. x 15 ft. to the eaves, gravel roof, brick paving, brick walls, \$800.

One building containing coal stores, 80 ft. x 70 ft. approximately — it is an irregular building — by 15 ft. 6 in. to the eaves, tar asphalt paving, gravel and shingle roof, \$6,800.

One storeroom building, 40 ft. 3 in. x 60 ft. x 11 ft. 6 in. to the eaves, frame, shingle roof, \$1,250.

Total buildings, \$30,450.

Real estate. In this real estate I mean to include the value of the land only, not the value of the buildings.

19,066 square feet of land at Bridge and Hamilton Streets, valued at 40 cents per square foot, \$7,626.40.

85,054 square feet of land, on which the gas works is built, at 50 cents, \$42,527.

Total real estate, \$50,153.40.

Total value of property as above, \$340,227.52.

Q. You do not include in your valuation anything for the half mill power? *A.* I do not.

Q. Can this properly be called a structural valuation? *A.* It is the value that I placed on the property as I find it.

Q. You take no account of profits, if there are any made from the business, or the income that is returned from the business, in these valuations, as I understand you? *A.* This valuation is not based on the earnings of the property, but I must know in a general way that the property can be used in such way that it can produce earnings.

Q. But in your valuations of property you have not considered, in fixing this value of \$340,000, the net earnings of the Company derived from it? *A.* I have not.

Q. You spoke at some time, and with reference to your

meters, in your testimony, that you took the meters from a schedule that was furnished to you. *A.* By the Holyoke Power Company.

Q. By the Holyoke Water Power Company? *A.* The Water Power Company.

Q. Did you know whether or not that was a copy of the schedule that they furnished the city? *A.* I was told that it was.

Q. Now did you see the meters yourself? *A.* I saw a few of them. To see all of the meters I would have to go into the cellars of the different people's houses.

Q. I understand. Then you speak of a list for the meters. As you ran along your valuation of the meters, I noticed you say "list." What do you mean by that? The list price? *A.* The manufacturers' list price.

Q. Then in one instance I notice you discount from that 25 per cent., and in another instance 30 per cent. Why? *A.* A meter, I think, is more valuable in a consumer's house than it is in a storeroom. It costs to put it in.

Q. Well, but you take off a discount, as I understand it? *A.* I take off a smaller discount.

Q. Well, why do you take off any discount? *A.* Because the manufacturer lists his goods higher than he proposes to sell them.

Q. So that makes a fair market value? *A.* That I consider the fair market value.

Q. Well, turning to your list of meters on page 7, I think it is page 7 of your schedule, I find 2,457 meters at a valuation of \$19,432. Were those the meters that were contained in the consumers' houses? *A.* Yes: that is the list of meters that is given me as being set, as it is technically termed.

Q. Then you had 110 meters. Are those the meters that they had on hand which had not been called for by the consumer? *A.* Yes, sir.

Q. Did you make an examination of those meters? *A.* Not an examination of every meter, but an examination of a few of them.

Q. Then you speak of 2,000 services at \$10 each. What do you mean by that? A. The connection running from the main to the consumer, which supplies him with gas.

Q. That is, that connection that runs from the pipe to the curbstone? A. Yes, sir.

Q. When you made your valuations, Mr. Randolph, as of what time did you make them? A. I made them, as I should roughly say, about two months ago.

Q. Did you make your valuations of that time or of an earlier time? A. The valuation made two months ago would differ in no material way from a month earlier.

Q. You say you had a copy of the schedule that was furnished to the City. What I am getting at is, did you make your valuation as of that time that that copy was furnished to the City, in January or February of 1898, or as of a later time? A. I made a valuation of the buildings as I saw them; and, when it comes to my stating the exact date that I examined those buildings, I am sorry to say that my memory is at fault. I do not seem to —

Q. I do not ask you that. What I am asking you is, as of what date did you make your valuation? As of the time that you were there making an examination of the plant or as of a previous time, in January or February, 1898? Do you see what I mean? A. Yes. If I recollect correctly, my visits here were as early as some time in December.

Q. Of 1898. I do not ask you that. Just watch my question. As of what year and what month in the year did you make these valuations that you have testified to? A. Why, I could answer that by saying it would be about of January of this year.

Q. January, 1899? A. Yes.

By Mr. GOULDING.

Q. At the time you were there, that is? A. Yes.

Cross-examination.

By Mr. MATTHEWS.

Q. You took a total valuation for real estate of \$50,153.-40, and by that you mean land? A. Yes.

Q. And that valuation was given you by somebody else?

A. Yes.

Q. 40 cents a foot for the land where holder No. 3 is, and 50 cents a foot for the land where the gas works are? A. Yes.

Q. Your estimate for buildings aggregates \$30,450. Does that include all the buildings on both lots? A. Yes. I will qualify that. I have included the houses over the holders,—under the head of holders.

Q. That is, the brick walls? A. Yes, and the roof.

Q. Have been included in the value? A. Of what I have termed holders.

Q. Yes. But all of the other buildings about the premises are included in this separate list of buildings? A. Yes.

Q. That is, the purifying house and the office and the coal shed and the generating house? A. Yes.

Q. On what basis did you reach the value of the buildings? I am not referring to the brick shells about the holders, but the buildings which you have estimated as worth \$30,450? A. I made a careful examination of the buildings to see that they were in good order and that they were suitable for the purposes for which they were designed.

Q. You got a separate valuation for the brick shells about the holders. Are those values included? A. Turn to page 3, and you will see the detail.

Q. Will you state what they amount to? Just the brick buildings so called, used in connection with the holders or connected with the holders. A. The first is \$3,600; the second, \$6,080; the third, \$7,500.

Q. And the total of the three? A. You will have to give me a pad. I have a pencil, but I have no paper. (After figuring.) \$17,180.

By Mr. BROOKS.

Q. What's that? A. That's the value of the three brick houses over the holders.

By Mr. MATTHEWS.

Q. So, if you were to separate these buildings from the valuation you have given of the holders, you would take off \$17,000 how much? A. I would add \$17,180.

Q. \$17,180 to \$30,450, that you have given us for the buildings alone, and get a total of \$47,630, wouldn't you, for all the buildings connected with the gas plant? A. \$47,630.

Q. That is right, is it? A. Yes, sir.

Q. Now will you state a little more in detail how you worked up the value of these buildings? A. I worked them up after, as I said before, after an examination of the buildings in detail, to see whether they were suitable for the purposes they were used for.

Q. Did you figure out what the buildings would cost to build now new? A. No. I figured the value of them now. I was placing the value as I found them.

Q. Well, what I want to know is how you got at the valuation, as distinguished, for instance, from the cost of rebuilding those buildings to-day? A. That is, I presume, under the general head of judgment as to the condition of the building, and what its present value is as compared with new.

Q. Did you make any figures respecting the value of such buildings, new? A. I did not. I did not make a valuation of the plant as it might have been new, and then say I will take so much off. I used my best judgment in valuing it as I found it. In my judgment, I take off whatever depreciation may have taken place.

Q. What I want to get at is, in what manner you made your allowance for depreciation. You did that originally in your first figures? A. Yes, sir.

Q. And reached that figure, according to what your judgment indicated as the probable value of the buildings, without making an allowance for depreciation? A. Without making an allowance for depreciation.

Q. Did you inquire what the age of those buildings was? A. In some cases I did, but that I have to take as second-hand evidence. I did not find a record on the books. I have got to take the building as I find it.

Q. What were you informed concerning the buildings of the gas plant? *A.* I cannot state from memory the age of any one of those buildings.

Q. Haven't you a record of it anywhere? *A.* I have no record of it. Approximately, I could possibly say the age, as told me, of one or two buildings.

Q. If you will kindly do so. *A.* The office building, I think, was said to be about fifteen years old. The retort house, I think, was about seventeen or eighteen years old. But those figures are just from memory. They were given to me in a general way, not from any records of the Company, but from the recollection of the superintendents; and I would not be governed particularly by the age of a piece of brick work if the evidence before my eyes was that it was good.

Q. Your valuation of the buildings depended to some extent upon the age of the buildings given by the officers of the Company? *A.* No, it depended on the way I found the building, not on the age given me by the Company, because that is going by testimony that I cannot of my own knowledge confirm.

Q. Whether you took the age into account or the apparent condition of the buildings? *A.* The apparent condition of the buildings.

Q. Did you hear Mr. Snow's testimony the other day? *A.* I heard part of it in this room.

Q. Do you remember his saying that the retort house and purifying house were both built before he became connected with the works in 1875? *A.* I heard it: I don't recall it, though.

Q. If it turned out to be the fact that those buildings, the retort house and purifying house, the principal buildings of the works, had been built some time before 1875, whether or not that fact would lead you to alter your estimates of value in any particular? *A.* No, because my view is based upon the condition of the building as I find it.

Q. Now, taking up the holders and the holder tanks, I see you put a total value of \$65,000 on them. That includes \$17,600 for the brick buildings about them? *A.* \$17,180.

Q. \$17,180. Now I would like to ask you, Mr. Randolph, whether the present practice in gas works is to surround the tanks with brick buildings or shells? *A.* There is no uniform practice about that. In the judgment of many good gas engineers the tank should be surrounded by a brick building.

Q. Isn't the more common and generally recognized better practice to omit the brick building? *A.* I cannot say that it is generally recognized as better practice, because the building is recognized as being good practice.

Q. Do you think it is commonly considered by gas engineers that these brick shells are worth their cost? *A.* The judgment of gas engineers is not a unit on that question. Some think that it is worth the cost. Others would rather put the money in other portions of the plant.

Q. Do you know of any gas holders that have been built in this way, surrounded by brick walls, in Massachusetts, in the last ten years? *A.* The only place I have in mind now is Waterbury, Connecticut. That is not in Massachusetts, but is probably in that general category.

Q. Isn't it a fact that practically every gas holder that has been erected in this State in the past ten years has been built without a brick shell around it? *A.* I could not state that as a fact.

Q. Now have you valued those brick walls and the gas tanks at the cost to build them to-day, less depreciation? *A.* Yes.

Q. Have you any special figures for the cost of building them to-day? *A.* I could not give you a list of the cost of the materials that go into the building from memory. I have not the data here. The data I have at the office where I made out my estimates.

Q. What relation, Mr. Randolph, does this \$17,180 that you have allowed for the brick shells and the gas tanks bear to the cost of building those shells to-day, so far as you can recollect? *A.* I couldn't say, because, as I said before, I didn't make my valuation in that way. I did not make the

valuation new, and then say take off so much depreciation. I used figures which, in my judgment, represented the value of the building as it stands to-day.

Q. I misunderstood you then. I understood you to say you did make up a value of these buildings new, in this particular case, but not for the general buildings of the gas works?

A. No, sir.

Q. That is, you valued them both in the same way? *A.* Yes, sir.

Q. How did you get the value of the holders themselves, being \$3,000, \$5,700, and \$6,500 respectively? *A.* That represented my best judgment of the present value of the holder as a working machine.

Q. And did you take the age of those holders into account? *A.* I took the present condition of the holder.

Q. Do you think you can examine the condition of an iron holder as well as you can of a brick building, and judge from personal observation its value? *A.* I think so.

Q. Is there any recognized commercial price for gas holders, according to capacity? *A.* No, sir, you go in the market, and buy the holder, and competition settles the price.

Q. Do not manufacturers publish lists? *A.* I have seen no published lists.

Q. Does your firm publish one? *A.* They do not.

Q. The total holder capacity at the works is 175,000 cubic feet? *A.* Yes, approximately.

Q. And the total generating capacity of the retort house and water gas plant is what? *A.* I stated that the present generating capacity is about 400,000 for the coal gas and 650,000 for the water gas.

Q. About 1,050,000 for the two? *A.* Yes, sir, present capacity.

Q. Do you understand what the maximum winter output of the plant is? *A.* I believe Mr. Snow's testimony was that the highest had been, say, about 425,000; and last year it was about 325,000, in that neighborhood.

Q. If the manufacture of gas at this plant should increase

up, say, to 500,000 or 600,000 for a winter maximum, you would have to have a larger holder capacity at the works, would you not? *A.* No, sir.

Q. You think a holder capacity of 175,000 would be enough for a plant that was turning out 500,000 or 600,000 cubic feet a day in the winter? *A.* With an outlying holder having a capacity of 150,000, I do.

Q. Now what do you make the capacity of the purifying pans? *A.* There are various rules for figuring the capacity of purifying plants. A common one would give the capacity at about 500,000 cubic feet. Boxes that are in daily use that I am personally acquainted with would,—figuring these boxes as doing the same work that the boxes referred to here do, these boxes would have a capacity of from 600,000 to 700,000 cubic feet daily during the period of maximum output.

Q. You would say 500,000 would be the ordinary commercial rating for these particular purifying boxes? *A.* For these boxes; but during the period of maximum output 600,000 to 700,000 would not be out of the way,—to put that much through the boxes.

Q. You found the capacity of the station meter to be 500,000 feet, I see, from your estimate of values,—each? *A.* Each: there are two station meters. That gives a total meter capacity of 1,000,000.

Q. Yes, but one of them is used for all the gas after mixing? *A.* It is not necessary to use it for all the gas, though.

Q. It is, as a matter of fact, isn't it? *A.* Merely as a matter of convenience, to separate the water gas from the coal gas.

Q. Let me ask you whether your list of machinery, meters and mains, corresponds exactly with the schedule filed by the Company and submitted to the City in January, 1898? *A.* So far as I know, it is.. It was taken from a schedule furnished me by the Holyoke Water Power Company, and I think no mistakes were made in transcribing.

Q. I want to know whether you found anything that was not in the schedule, or found something in the schedule which

was not in the plant. *A.* When it comes to the mains, I made no endeavor to find what they did not have, because I —

Q. You simply took the schedule? *A.* I took the schedule. I had no other way of getting at all the data.

Q. And in regard to the machinery at the works, did you find the schedule to be correct? *A.* Yes, I do not think I took exception to — I will say that in small details, such as pipe and fitting, I made no attempt to count those fittings or to list the pipe.

Q. I see that you value the water gas apparatus at \$12,100. That is so, isn't it? Page 4? *A.* Yes.

Q. Did your firm furnish that plant? *A.* Yes.

Q. Everything included in that estimate of \$12,100? *A.* Yes.

Q. Anything else? *A.* There is an oil tank furnished by us that was classified under oil tanks, and one of the meters was furnished by us,—station meters. It is classified under meters.

Q. Do you know what price your firm received for this water gas plant? *A.* I don't recollect, no.

Q. Did you take that price into account in reaching this figure? *A.* No, I considered the present value of the plant regardless of what the Company had paid for it several years ago.

Q. Did you know what the Company paid for it? *A.* Yes, because I have got it.

Q. You knew what the contract price was? *A.* Yes, sir.

Q. \$14,000, wasn't it? *A.* I could not tell you from memory. I would have to go back to the books to see.

Q. My question is whether you took that fact into account in valuing the plant this year? *A.* I did not take the price that they paid for it into account. I knew what material was furnished; and I took what, in my judgment, was the market value of the material at the time it was valued.

Q. Does your estimate of \$12,100 represent the cost of such a plant new as of the time when you valued it or the value of the plant considering the fact that it had been in use for two years or thereabouts? *A.* It takes into account the

value of the plant as it stood when I examined it, but I would qualify that by saying that that value would not differ materially from the value new.

Q. This plant had been in use for two years and a half, hadn't it? *A.* About.

Q. Wouldn't you allow anything for that fact? *A.* The plant, as far as I can see from an examination, has deteriorated in no respect; and, unless I can find some deterioration in it, I would not set a theoretical value for deterioration.

Q. How long do you assume that such a plant would last if kept in as good repair as ordinary care could do? There would be some limit to its life, even then, wouldn't there? *A.* Well, it depends on how you look at it. If you paint a piece of iron regularly, take proper care of it, it is very difficult to say how long it will last. I cannot answer that question, for the reason that I have not had sufficient years of experience to enable me to say what the life is.

Q. What you have done in this particular case is — in this particular case of a water gas plant put in in the summer of 1896, which you value at the end of 1898 — you have made practically no difference between the value of that plant after that lapse of time and use and what the value of it new would be? *A.* Practically none. That plant has been thoroughly tested, and a plant that has been tested and known to be in thorough working order is often worth much more than a new plant that has not been tested.

Q. You were asked whether you included the water power, and you said, No, I believe? *A.* I did not include the water power.

Q. But you did include the wheel-pit? *A.* Yes: the machinery, but not the power.

By Mr. GOULDING.

Q. Did you include the wheel? *A.* Yes.

By Mr. MATTHEWS.

Q. Coming to the item of paving, do I understand that your estimate of an average value of 30 cents per lineal foot for the 27,000 feet of mains includes simply the cost of the pav-

ing or the cost of digging and laying? *A.* That is intended to include the additional cost of mains under paving.

Q. Oh. Then your estimate of the cost of the mains themselves, running from ten cents to \$1.60 a lineal foot, includes not merely the cost of the pipe, but the cost of laying under ordinary circumstances in an unpaved road: is that so?

A. It includes the value of the main system as found at Holyoke in the kind of soil that I find here.

Q. Then I was correct in assuming that your estimate of so much a lineal foot for the mains included not only the cost of the pipe, but the value of the pipe laid? *A.* That value is intended to represent my judgment of the value of the main system as a working set of mains in use.

Q. In use? *A.* That includes everything,—labor and material.

Q. Labor and material, but as laid, that is as if it were laid, in ordinary soil, without pavements? *A.* Yes, that is the idea. That is an arbitrary way of separating the cost of your paving from the main. As a matter of fact, you would go along, and both would come together; but I have no other way of separating it.

Q. Then, if I understand you correctly, the \$8,163.30, which you estimate to be the value of the paving over the mains at 30 cents per lineal foot, is the extra cost? *A.* That is the extra cost.

Q. Or, rather, the extra value of the distribution system per lineal foot, owing to the fact that there are pavements in the city of Holyoke? *A.* Yes.

Q. Now you say that this is an arbitrary way of dividing the cost. Can you divide it otherwise? *A.* If I knew the individual lengths of pipe that were put down—sizes of pipes, say 6-inch pipe under paving,—I could include that in the cost of the pipe, and say that there was so much pipe under paving at such and such price; but I had no way of getting the data in that detail.

Q. That is, the Company did not furnish you with records of the number of 3-inch pipe, for instance, under asphalt pavements? *A.* No.

Q. And the number under macadam pavements, and so on? *A.* No.

Q. Therefore you do not think it would be practicable to arrive at the extra cost of paving in any other way than this, or you do not think of any better way? *A.* I do not think of any better way.

Q. Now as to the value of the pipe system itself, regardless of the item of paving: isn't it customary to estimate the value of the mains themselves as so much iron pipe, and then add the cost of laying? *A.* Different people make their values in a different way. I have valued a good deal of pipe, and that was my usual way of placing the values on them.

Q. Have you the data for estimating the value of these mains as pipe? *A.* I have no greater detail than is given there.

Q. Have you made any estimate of the value of the mains themselves as cast iron pipe? *A.* Taking the total weight of the —

Q. As distinguished from the cost of laying them or the value of them as laid? *A.* No, I have not.

Q. What? *A.* I have not.

Q. Did you have any data or were you furnished any data showing the weight of these pipes? *A.* I was not, but I examined the pipes that had been taken up out of the ground, and some few lengths of pipe that were already in the gas yard that had the weights marked in them, to see whether the pipe was of normal weight for purposes of its use.

Q. Then would not it have been possible for you to have estimated the value of this pipe separately from the laying? *A.* It would have been possible, but I did not estimate it that way.

Q. You could have done it, but you did not: that is so, isn't it? *A.* Yes, sir.

Q. Did you take into account the age of these mains? *A.* I took into account the condition rather than the age, because I could get no accurate data in regard to age. And, furthermore, in my judgment, age does not enter into the calculation

of a main system any more than it does into the value of a building: it is the condition of the main system as found.

Q. How do you get at the condition of gas mains buried in the earth? *A.* By an examination of their leakage. We judge from that of the condition of the mains, and by an examination of such evidence as is obtainable in the shape of pipe that has been dug up from the soil; knowledge of the action of the soil in the city in question on cast iron pipe.

Q. Did you find this system, as a result of this examination, in good condition? *A.* I found it in fair condition.

Q. What do you mean by that? And what allowance did you make in your valuation for that condition? *A.* It is about normal. If you look over the Commissioners' reports, showing the leakage per mile of main, you will find that the leakage per mile is about normal for this city.

Q. You refer to the reports of the Board of Gas and Electric Light Commissioners of the Commonwealth of Massachusetts? *A.* Yes, sir.

Q. And did you use the information contained in those reports in making up your opinion of the value of this distribution system? *A.* That helped me to my judgment of it.

Q. Are you aware that the Commission includes in its reports a comparative statement of the leakage of each gas company in the State, figured by percentages of the total output or sales? *A.* Yes.

Q. Did you take the results of that table or the data contained in that table into account in forming your opinion of the value of these mains? *A.* No, because you can have a system that is very perfect that will show a large percentage of leakage if the sales are small; and, in my judgment, the only fair way to consider the condition of a system of mains is to work it down to leakage per mile.

Q. When you say the sales small, you mean per mile of main? *A.* Yes; or total sales, you might say. Take, for instance, this works: if it was selling no gas and the mains were full of gas, the percentage would be enormous of leakage.

Q. As a matter of fact, the sales per mile of main of this

Company are fully up to the average of Massachusetts gas companies, are they not? *A.* I would have to look the table over again to answer that.

By Mr. BROOKS.

Q. What table? *A.* The table referred to by Mr. Matthews in the Massachusetts report.

By Mr. MATTHEWS.

Q. And you paid no attention whatever, in forming your opinion of the value of this distribution system, to the percentages figured out by the gas commission to show the amount of leakage for this Company as compared with other gas companies in the State? *A.* No. I based my judgment rather on the leakage per mile than on the percentage.

Q. Then the fact that the gas commissioners' calculations show that the percentage of leakage for this Company is greater than that of any other company in Massachusetts, supplying a community of about the same population as Holyoke, did not affect your valuation of the Company's distribution system?

(Objected to.)

Mr. MATTHEWS. On cross-examination that is a fair question.

THE CHAIRMAN. I understood the witness to say he had examined this table.

Mr. MATTHEWS. No, he has not answered this question. The point of this question, if the Commission please, is this: The Board of Gas and Electric Light Commissioners publishes annually various tabulated statements relating to the consumption and operations of gas companies. It publishes a statement of the leakage per mile of main, which is the statement which this witness says he uses; but it also publishes a collation made by itself of percentages of leakage based upon total sales for all the gas companies in the State, and the reports for a series of years show that the percentage for this Holyoke Water Power Company is greater, I believe, than that of any other gas company in the State, doing business in a city of similar size. I am asking the witness whether he took that fact into account in his estimate of value.

Mr. GOULDING. Do you think your question confined him to that table?

Mr. MATTHEWS. Yes, sir, I intended it to.

Mr. GOULDING. I did not know: I did not understand that it did. He had answered it, at any rate, once before, that he did not consider the per cent. upon the sales.

Mr. MATTHEWS. He can answer it again, then, that is all. I did not understand him to.

THE CHAIRMAN. I did not understand him to. He may answer it.

Mr. BROOKS. Let that question be read.

The stenographer read the question, as follows:—

Q. Then the fact that the gas commissioners' calculations show that the percentage of leakage for this Company is greater than that of any other company in Massachusetts, supplying a community of about the same population as Holyoke, did not affect your valuation of the Company's distribution system?

Mr. BROOKS. I object.

Mr. GOULDING. That shows he did not put in that it was a percentage upon the sales.

Mr. BROOKS. No.

Mr. GOULDING. I suppose that is what Mr. Matthews meant.

Mr. MATTHEWS. Percentage on sales?

Mr. BROOKS. There is nothing said there about percentage on sales.

The question was read again by the stenographer.

Mr. MATTHEWS. Percentage of leakage based on sales: that makes it plain.

Mr. BROOKS. That we object to. We say there is no such thing shown to exist; and, if an examination of reports were made, it will not be found to exist.

THE CHAIRMAN. Perhaps you might qualify your question and say, "If such a fact."

Mr. MATTHEWS. I will put the question this way:—

Q. If the tabulated statement or calculation to which I have referred, as contained in the reports of the gas commission,

does show such a state of affairs for the gas plant of the Holyoke Water Power Company, you did not take that fact into account in estimating the value of its distribution system?

MR. BROOKS. That we object to.

THE CHAIRMAN. Well, we admit it.

MR. BROOKS. There is nothing contained in the question. He says "that state of affairs." Now there have been several states of affairs.

THE CHAIRMAN. He is referring to the former question.

MR. BROOKS. If that is put in, I do not object to it.

THE CHAIRMAN. What do you say, Mr. Witness: would you take that into account?

THE WITNESS. If he is referring to the former question, if he will read me the former question and then read this again.

MR. BROOKS. I suppose the latter question should be read previously.

The stenographer read the last question, as follows:—

Q. If the tabulated statement or calculation to which I have referred, as contained in the reports of the gas commission, does show such a state of affairs for the gas plant of the Holyoke Water Power Company, you did not take that fact into account in estimating the value of its distribution system?

Also the previous question as modified, namely:—

Q. Then the fact that the gas commissioners' calculations show that the percentage of leakage for this Company, based on sales, is greater than that of any other company in Massachusetts, supplying a community of about the same population as Holyoke not affect your valuation of the Company's distribution system?

By the CHAIRMAN.

Q. Boiling it down, did you take that into account at all, if it is a fact? A. I give weight to all of the tables given by the Massachusetts commissioners; but, in considering the condition of the mains, I placed most weight on the table which gives the leakage per mile of main.

By Mr. MATTHEWS.

Q. Did you place any weight upon the table which shows the percentage of leakage per total sales? A. It is difficult to

say how much,—to weigh exactly the effect of evidence of that kind on my mind. I examined the table and considered it.

Q. I understood you to say a moment ago that you found the distribution system of the Holyoke Water Power Company in about a normal condition in respect to leakage.

Mr. BROOKS. He had that in, *Mr. Matthews*, per mile of main.

Mr. MATTHEWS. I did not think so.

THE WITNESS. That is the intent of my reply right through, —per mile of main, in my judgment.

Q. That is to say, the condition of this distribution system in respect to the question of leakage you found to be normal so far as the leakage per mile of main goes? *A.* Yes.

Q. But you did not find it to be normal so far as the total sales went, did you? *A.* I do not, in valuing a main system, take into consideration questions other than those based on the leakage per mile of main, because, in my judgment, that is the fairest basis to work upon.

Q. Well, then, if I understand you, you did not take the other table into account? That is all I want to get at. *A.* I examined the other table. Just what weight that had with me I cannot differentiate, and say one affected me so much and another another percentage.

Q. I understood you to say just a moment ago—half a minute ago—that you relied upon the table showing the leakage per mile of main, and not upon the other? *A.* I placed most weight upon that table. I set most value by the table showing leakage per mile, for this reason: that a works may have a percentage of leakage of 3 per cent., we will say. Their leakage per mile of main per day may be 1,200 feet, which would be very bad, while their percentage is very good.

By Mr. BROOKS.

Q. What percentage? *A.* Percentage on the—

Q. Sales? *A.* Sales.

By Mr. MATTHEWS.

Q. You rely as a basis for your opinion upon the condition of the mains with respect to leakage upon the table showing leakage per mile of main? *A.* Yes.

Q. But, when you come to consider the amount of gas that the Company is making or selling, you do not rely on that table, do you? The relative amount of gas that is being sold in a community or by a company as compared with other companies? *A.* Why, I have not stated that I did.

Q. I understood you to say that the Holyoke Water Power Company was selling a small quantity of gas? *A.* No, I did not state that.

Q. As a matter of fact, it sells just as much gas per mile of main as the average Massachusetts gas company? *A.* I did not state that they were selling a small amount.

Q. I understood you to. I understood you to make that very statement,—that this Company was selling a small amount of gas.

Mr. BROOKS. Per mile of main?

Mr. MATTHEWS. No, a small amount of gas.

THE WITNESS. I did not make that statement.

Q. You did not make it. Well, as a matter of fact, the sales of the Company figured per mile of main are about up to the average, aren't they, of a Massachusetts gas company? *A.* There are some that will show considerably more, some that will show less.

Q. I asked with respect to the average. *A.* I have not averaged that table. If you have got the table and will let me look it over, I can probably answer those questions better.

THE CHAIRMAN. You can easily show that fact.

Mr. MATTHEWS. I was looking for a paper, that is all. I am sorry to keep the Commission waiting. We can show that otherwise, of course.

Q. Now can you state the value of these gas mains as cast iron mains? *A.* No, sir, I have not valued them that way.

Q. Can you value them that way? *A.* I could have valued them that way, but it would have been questionable then whether I would value them as junk or what I would value them as.

Q. How much have you allowed in your schedule of value per lineal foot of main for the laying as distinguished from the pipe? *A.* I haven't got that detail separate here.

Q. Did you inquire what the cost of laying mains was in Holyoke per lineal foot? *A.* I found that the Company didn't keep their records in such shape that they could give me those costs.

Q. Did you make any other inquiries to find out the cost of laying gas or water pipes, or any similar object, per lineal foot in the streets of Holyoke? *A.* No: I based my judgment on past experience in other cities, and what, in my judgment, the main system is worth in a place, in Holyoke, to-day, all things considered,—or, rather, at the time the valuation was made.

Q. That is, this is a jump estimate of yours, so to speak, of the value of that distribution system in place? *A.* It is no more a jump estimate than any other valuation carefully considered is.

Q. Well, you didn't consider it with sufficient care to inquire what the cost of laying pipes in Holyoke was? *A.* I made the inquiry, but the detail could not be furnished me that way.

Q. Did you ask the officers of the Company what their opinion was as to what it cost them to lay gas pipes? *A.* No more than I consulted the officers of the Company as to whether I had valued the buildings correctly.

Q. You say that they couldn't give you any data from their books showing the cost of laying mains? *A.* Their books were not kept in such a way, I was told, as to furnish the data for separating material and labor and mains.

Q. Didn't you know that Mr. Foster was at work on these books for the purpose of separating these items? *A.* Yes.

Q. Did you ask Mr. Foster what his work showed the Company paid for laying these mains? *A.* I asked Mr. Foster if that could be picked out. Mr. Foster said it could be picked out with no certainty.

Q. Did you hear his testimony yesterday and Friday? *A.* I heard part of his testimony Friday, but I didn't hear his testimony yesterday.

Q. Don't you understand that Mr. Foster took the total bills of the disbursement part of the gas plant and apportioned

them, including all sums paid for digging in the streets, as between construction and annual expense? *A.* I didn't hear Mr. Foster's testimony, and I can't — if it could be read to me.

Q. Do you mean to say that Mr. Foster told you he couldn't tell what the Company paid for laying its mains? *A.* I said this : Mr. Foster told me that he couldn't tell the value of the mains that I was considering. He couldn't pick it out from the books. He probably could by going to very great detail and spending a great deal of time on it.

Q. Now, Mr. Randolph, it doesn't cost more to lay one main, does it, than another of equal size and length? Everybody figures so much per lineal foot, don't they? *A.* I won't say that everybody does : that is the way I figure them.

Q. Did you ask Mr. Foster whether he could tell you what the Company was actually paying for laying its gas mains? *A.* No, I didn't put the question to him just in that way, but I made certain inquiries of this kind, which would indicate that the Company paid so much for labor, and part of that labor was for mains ; but that the entries in the past were so made that you couldn't pick out a given length, a given size, of pipe, on a given street, and say that the 3-inch main here cost so much for labor and so much for material. Therefore I based my judgment on the value of the main system, on my experience in laying mains in other cities, and what, in my best judgment, is the value of this main in Holyoke.

Q. That is, when you found that you couldn't discover exactly what it cost to lay a particular length of pipe in a particular part of a particular street of the city of Holyoke, you gave the whole business up, and proceeded to estimate what the value of this system as a whole was?

MR. GOULDING. Is that a fair presumption, that he gave the whole business up? He has told you exactly how he got at it, in a very intelligent way, I submit.

MR. MATTHEWS. I haven't yet got the fact I want to get ; and that is, why he didn't do what any other expert would have done, and what anybody who ever listened to the trying of a case like this would expect, that is, find out what it cost to lay pipes in the community which he was inspecting. He has not given an intelligent answer to that question yet.

Mr. GOULDING. I submit he has given a perfectly intelligent answer. He says he has relied on his experience in other cases ; and the earth is about the same in Connecticut as it is in Massachusetts, and the cost of digging a hole in the ground is not substantially different. At any rate, he has given the method by which he got at it.

THE CHAIRMAN. The witness simply says that he didn't find the data.

Mr. MATTHEWS. He didn't find the data for a particular piece of pipe ; but couldn't he have found out what the Company was paying on an average for digging trenches in the street ?

THE CHAIRMAN. That is a question of argument.

Mr. MATTHEWS. I am asking why the witness didn't do it.

THE CHAIRMAN. (To the witness.) Well, answer why you didn't do it.

Q. This is the question. Why didn't you inquire of the officers of the Company what it cost them on the average to lay pipes in the streets of Holyoke per lineal foot ? A. Because I wasn't asking the Company to make a valuation for me.

Q. That is the only explanation you can give, is it ? A. I think that is sufficient.

Q. Did you take any steps to inquire what it cost to lay water pipes in the city of Holyoke ? A. I didn't.

Q. You knew the City of Holyoke was in the habit of putting in water pipes, didn't you ? A. Yes, I did ; but I wouldn't ask the City to value for me the pipes of the Holyoke Power Company.

Q. Now what did you estimate yourself it would cost to lay pipes in this city ? A. I didn't make up the estimate that way. I made up an estimate of what, in my judgment, was the value of those pipes laid in the city.

THE CHAIRMAN. We understand that he has not made any examination.

Mr. MATTHEWS. I am trying to find out whether he knows or has any opinion.

THE CHAIRMAN. We understand he does not know and has no opinion.

Mr. MATTHEWS. Well, I don't know about that.

THE CHAIRMAN. That is what he has stated.

Mr. MATTHEWS. Counsel on the other side seem to think he knows ; and, if he knows, we ought to have the benefit of his knowledge.

Mr. GOULDING. We think he knows, and knows as much as the experts that may be produced to show exactly what it cost there. He knows from his experience in other places. It may be that my learned friend on the other side does not think his means of knowledge equal to that of some other people, but we do not admit that he does not know. We admit he has not done the things that counsel is inquiring about.

Q. Mr. Randolph, do you know, or have you any opinion concerning, the average cost of laying gas pipes in the city of Holyoke per lineal foot? A. I have no knowledge of the cost of laying water pipes, and I have explained to you that I could not get —

Q. I said gas pipes : I didn't say water. A. The Holyoke Water Power Company is the only company, as I understand it, that lays pipes in the city of Holyoke.

Q. I asked you if you have any knowledge or opinion of the cost of laying gas pipes in the City of Holyoke, exclusive of the cost of the pipe itself? A. I have stated that I have not valued the pipe, the mains, on the basis of cast iron. My judgment is of the value of the mains in the ground. The different sizes are given in detail there, and that represents my judgment of the value of those mains.

Q. My question was this : Have you any knowledge of the cost of laying gas pipes in the streets of Holyoke?

Mr. GOULDING. Your other question was "knowledge or opinion."

Mr. MATTHEWS. I will leave out the opinion, if you object.

Mr. BROOKS. We do not object.

Q. Have you any knowledge, I will put it that way? A. Any knowledge of the cost of laying pipe?

Q. In the city of Holyoke, per lineal foot? A. As obtained from the Company's books, I have none.

Q. In any other manner have you? A. I have a judgment of what the value of the mains at a given time is.

Q. No, that is not my question. My question is, Have you any knowledge, derived from any source, of the cost to lay gas pipes in the streets of Holyoke? *A.* That would be putting to me a different problem. If you will ask me whether I can give you the value—

THE CHAIRMAN. He asks, Have you any knowledge of what it costs to lay gas pipe in Holyoke,—personal knowledge.

THE WITNESS. I can make an estimate on what the cost of new pipe would be.

Q. That is not the point at all. That is not the question. The question is whether you have any knowledge of the cost of laying pipe.

THE CHAIRMAN. Apart from the cost of the pipe itself.

Q. The cost for the labor of laying,—the labor and material, if there be any material? *A.* I have knowledge of this kind, that labor in Holyoke is not essentially different from labor in other sections of the country round here, and a man in Holyoke can do about as much work, I take it, as the average man; and upon that knowledge I base my judgment of the cost of labor.

Q. What do you estimate the cost of laying pipe in the streets of Holyoke is, then? *A.* I have not made up an estimate that way.

Q. Do you know what it is? *A.* I can make an estimate.

Q. Can you not state what the cost of laying pipes per lineal foot in the streets of Holyoke is?

MR. BROOKS. He says he will make an estimate.

By *MR. MATTHEWS.*

Q. It does not require an estimate. Can you not state what the cost of laying pipes per lineal foot in the streets of Holyoke is? *A.* You cannot answer these questions off-hand. A simple question of that kind involves considerable calculation as to what it would be. I have given this subject careful thought as to the value of the mains as they stand to-day. I have not taken up the problem of what it would cost me to come into town and lay new mains.

Q. You haven't given sufficient thought to that to find out what it would cost to lay gas mains in the streets of Holyoke,

have you? *A.* I have given sufficient thought to make an estimate on that subject.

Q. Have you got the estimate here? *A.* I have not.

Q. Where is it? *A.* I said I had given sufficient thought to make an estimate.

Q. Where is the estimate? *A.* I have not made it.

Q. You could make an estimate now? *A.* Yes.

Q. Will you do that? *A.* I have not the data before me to make that estimate with. I made my valuations in New York City, and all my papers are there.

Q. You say you have laid gas pipes in Connecticut? *A.* Not personally.

Q. Have you ever laid gas pipes personally anywhere? *A.* I have.

Q. Where? *A.* In New York, Des Moines, Kansas City —

Q. Are you able to state —

Mr. BROOKS. Let him finish his answer.

By Mr. MATTHEWS.

Q. Oh, yes, certainly. Go on with any other places. *A.* I have laid mains in a great many cities that we have constructed gas works in.

Q. Are you able to give an estimate or form an opinion of the average cost of laying gas pipes per lineal foot, or by any other measure of length? *A.* I don't carry those data round by memory.

Q. Did you or did you not use that information or data in making up your estimate of the value of the distribution plant in the city of Holyoke? *A.* I made my estimate of the value of the mains laid in Holyoke to enable me to form my judgment of their value.

Q. Did you or did you not use, in making your value of these Holyoke mains, the information and data you had acquired in other places as to the cost per lineal foot of laying gas pipes? *A.* General information.

Q. What was the information or opinion that you used? *A.* I used the general experience that I have had in different places, and my estimate represents the sum of my judgment on that subject. I fail to see how I can make myself more clear.

Q. What figures, if any, did you take in forming this opinion of the cost of laying gas mains per lineal foot, as observed by you in other places? *A.* I don't think I quite understand that question.

Q. What figures, if any, did you take in forming this opinion of the cost of laying gas mains per lineal foot as observed by you in other places? *A.* The figures there used represent the results of experience in other places. I cannot say definitely in which particular place.

Q. What portion of these figures, if any, represents the cost of laying the mains as distinguished from the mains themselves? *A.* I have not the data separated in that detail. The material and labor are all included in the estimate.

Q. Now you have estimated 30 cents as a fair average value per lineal foot for the extra item of pavements? *A.* Yes, sir.

Q. How did you get at that? *A.* That, I find, is in my judgment the extra cost of removing and replacing paving per lineal foot. It is based on experience in other places, and is somewhat lower than what I believe it would cost to replace the paving now in Holyoke; and the way that is arrived at in general is, that a certain class of paving costs a certain amount. Asphalt, we will say, tar asphalt, is \$1.50 per square yard, and the asphalt spoiled by the trench would nearly average 30 inches, and in many places it is more.

Q. What 30 inches? *A.* The width of the asphalt spoiled by the trench.

Q. Did you figure an average width for the excavation? *A.* In my judgment, I took an average width of about 30 inches.

Q. Two and a half feet? *A.* As the amount of paving that would be affected by the excavation.

Q. Then your 27,211 lineal feet represents that figure multiplied by $2\frac{1}{2}$, as the area or surface of the pavement that you estimate would cost on the average 30 cents a lineal foot? *A.* Yes, sir.

Q. It is common, I understand you to say, to estimate the cost of pavement at so much a square foot? *A.* Yes.

Q. What are the estimates that you have made per square foot of the five different pavements that you have enumerated

in this list? *A.* I am sorry I have not shown that in detail. A statement of the cost of paving in Holyoke was furnished me by Mr. Sickman.

Q. Which Mr. Sickman? *A.* His initials I do not know, but the engineer, the civil engineer.

Q. The elder Mr. Sickman? *A.* The elder Mr. Sickman.

Q. You say Mr. Sickman furnished you with data of the cost? *A.* Data of the cost of paving in Holyoke, the prices paid for it by the City.

Q. Prices paid by the City? *A.* That is what I understand as the value of paving.

Q. You got data, then, as to what it costs the City to lay pavement, but you haven't got data as to what it costs to dig? *A.* I do not think data of what it cost to dig, as furnished by the City, is necessary for me to make up the estimate. It is a fact that the outside contractor comes in here and puts down paving for a certain amount. That figure I assumed is general property, probably, and is furnished me correctly by the Power Company.

Q. Well, now, you misunderstood my question. It was not directed to whether you got information as to what it cost the City to dig, but what it cost to dig or open the streets of Holyoke for gas pipes. *A.* No, I didn't get any data on that. I got data on the general nature of the soil, that it was sandy, not gravelly, not that class of soil,—in that way of course.

Q. You took pains to get data relating to the nature of the soil and to the cost of pavements, but you did not think it necessary to get any data showing the cost of opening the streets, or of laying gas mains in that city. That is so, isn't it? *A.* I did not get any such data, no.

Q. Who has the paving estimate that you refer to?

Mr. BROOKS. I didn't understand him to say anybody had it. He asked Mr. Sickman.

THE WITNESS. Mr. Sickman gave me the figures, and I have not the details before me.

By Mr. MATTHEWS.

Q. Did Mr. Sickman give them to you on a piece of paper, or did you simply take them down? *A.* I think I set them down from what he said.

Q. You have not those figures with you? *A.* I have not those figures with me.

Q. Do I understand that you know now, or knew at any time, the weight of the pipe that the Holyoke Water Power Company has laid for its gas mains? *A.* Yes, I made such inquiries as were open to me, to ascertain the weight of pipe furnished, and took that into consideration.

Q. Can you state figures in respect to the weight of the pipe? *A.* No. I talked with R. B. Wood, who furnishes the gas pipe for Holyoke. They stated —

Mr. GREEN. I object.

Mr. BROOKS. It is the very thing he asked.

Mr. GREEN. Well, I don't object.

THE WITNESS. They had furnished the regular weights listed in their catalogue. They furnish a catalogue, I believe, which shows several weights of pipe, one under the head of gas pipe, under weight, and one under the head of water pipe, capable of bearing such a number of pounds, and still a heavier pipe.

Q. How long did I understand that the firm of Wood and Company had been furnishing the Holyoke Water Power Company with gas mains? *A.* For a number of years. I asked them to furnish me with details data. They said they could, if I could give them time, but their records were pretty well stored away, and it was difficult for them to say how long they had been furnishing them pipe.

Q. How long do you understand they had been furnishing pipe for the Company? *A.* They gave me to understand that they had been furnishing it for at least twenty years.

Q. What weights did they tell you they furnished the Company? *A.* I could not give you that from memory. I could get their catalogue and read you from the weights.

Q. That is the only way you could tell the weights of the pipes that the Holyoke Water Power Company have laid in the streets of Holyoke? *A.* That, and by examining the pipe as I found it in the works that have been taken up from the street.

Q. Did you find that that pipe corresponded to the weights

given in this catalogue? *A.* There is only one figure that I have in my memory, and that is for 12-in. pipe. Its weight was 716 pounds, if I recollect correctly.

Q. What was the diameter? *A.* 12-in., and that corresponds, I think, with their catalogue. My recollection is that that catalogue weight is about 690 pounds for 12-in. pipe.

Q. For the whole length? *A.* Yes, sir.

Q. And the length is how long? *A.* Twelve feet.

Q. And you found that the length of pipe which you actually weighed corresponded with the weight given? *A.* I did not actually weigh it, but I saw the weight written in the end of the pipe. That is the usual way that manufacturers have of showing the weight of pipes.

Q. I understand that you have not, of course, seen any of these pipes as they lie in the ground? You have not had any of them dug up? *A.* No, sir.

Q. And you have been unable, therefore, to inspect their condition, except as you might infer that condition from the leakage? *A.* And from sections of pipe that I found in the yard which had been dug up on the street.

Q. Which you did not see dug up? *A.* Which I did not see dug up, but which I take on the word of the superintendent as having been dug up and brought in.

Q. You do not know the length of time that these pipes have been in the ground? *A.* No, from personal knowledge I do not.

Q. Do you know from any information? *A.* I know from discussing the subject with Mr. Snow, in a general way. This is the impression I got from my talk with them, that the bulk of the pipe has been put in since he came with the Company. That was probably in 1875. Extensions have been made from time to time to the present day.

Q. Did you hear Mr. Snow testify the other day that he couldn't tell when those pipes were laid? *A.* Well, I said that was the impression I got from talking with Mr. Snow as to how long those had been in the ground.

Q. Then your means of judging of the condition of these pipes was the leakage record and your impression of what Mr.

Snow said as to the age of the pipes and the samples which you saw in the yard? *A.* And my general knowledge of gas-line main systems laid in a soil like there is in Holyoke.

Q. But in respect to the buildings, I understand that you examined those in detail? *A.* Yes, sir.

Q. So that you are able to form a judgment from your own personal inspection of the condition of all the parts of the several buildings? *A.* Yes, sir.

Q. Was your attention attracted to, and did you take into account the fact that this Company has a very large percentage of small sized mains? *A.* I examined the map in detail, with a view to seeing whether those small mains could properly be reinforced with larger mains, run up to supply the smaller pipes with gas.

Q. It is a fact, is it not, that the Company has an abnormal number of small-sized mains? *A.* I would not say that.

Q. Do you not think that they have a larger number of 3 or 4 inch mains than you find in a normal gas plant? *A.* No larger proportion, in my judgment, than a good many gas companies that I have examined.

Q. How do you think the proportion of small-sized pipe compares with the usual proportion in Massachusetts? *A.* You will have to let me see the plan.

Q. Then you have not taken that into account? *A.* I have taken into consideration the sizes as I found them in the streets, and made up my judgment as to whether those sizes are sufficiently large to supply the district when tied in properly with larger mains.

Q. This system is not supplied with gates, is it? *A.* There are a few gates, but the system, as I recollect, is not what we call thoroughly districted.

Q. That is, there is not the usual proportion or number of gates? *A.* There are quite the usual number of gates, I think. Throughout the country you will find very few gas works that are thoroughly districted. By that I mean, any system of valves put in, so that small sections of the city pipes can be isolated and tested.

Q. I understand you to say you had never valued any plants in Massachusetts? *A.* No, I don't think I have.

Q. I understood you to say that you have reached your value without taking into account the profits, income or business of the Company? That is so, is it? *A.* I considered the plant merely as a going concern, and did not take into consideration the income derived from its business.

By Mr. BROOKS.

Q. Did you say growing or going? *A.* Going.

By Mr. MATTHEWS.

Q. You did value this property as a going concern? *A.* Yes, sir.

Q. By that I suppose you mean a plant assembled, in operation, all ready to start up? *A.* Yes, sir.

Q. With no more contingencies of installation to bear the expense of? No more contingencies of installation to pay for? *A.* I am not sure that I know what you mean by contingencies of installation.

Q. Well, I will put it in this way. You have valued the plant as a plant which is capable of being put into immediate and successful operation? *A.* Yes, and is in successful operation.

Q. I understood you to say that you did not take earnings into account, but you had to be satisfied that the Company could make earnings. If I have repeated your words correctly, I wish you would explain a little more what you meant by that. *A.* By that I mean to say that I take the conditions into consideration, that the plant is capable of being used for earning money, that it is in a town suitable for the sale of the product that it manufactures, that it is not an isolated out-of-the-way plant, that cannot be used, and its product cannot be disposed of.

Q. You mean that you took the various local conditions that you detected into account? *A.* Well, what do you mean by various local conditions?

Q. I had reference to what your chief, Mr. Humphreys, said—that he had taken local conditions into account. *A.* Well, in considering plants we always take the local conditions into consideration.

Q. I understand, then, without following that question up

any farther, that you have valued this plant as a going concern situated in a town where there is a demand for such a plant, and capable of being operated and earning money? *A.* Yes.

Q. Did you take into account the cost of manufacturing gas at this plant? *A.* No, I took into account the nature of the machinery and considered whether that machinery could manufacture economically.

Q. Did you attempt to find out whether it did, as a matter of fact, manufacture gas economically? *A.* The records obtained by Mr. Humphreys would show that; but in valuing the plant it would not necessarily enter into my calculations. If I know that a standard apparatus under normal conditions and with good management can produce certain results, I value it accordingly. The work that it is doing to-day does not necessarily affect my judgment of its value, because I know that it can be made to do good work.

Q. Did you inquire what the cost of gas in the holder was? *A.* I have seen Mr. Humphrey's statement that —

Q. Mr. Humphrey's made that inquiry, then? *A.* Mr. Humphreys made that inquiry.

Q. You would value this gas plant the same, do I understand you, whether it was turning out gas at 50 cents in the holder or at 75? *A.* As a going concern, I would. The gas in the holder has to do with its value on an earning basis. I know what a given class of machinery — let us take, for example, the coal gas benches. I could not tell you to-day just what percentage of coke is being used in them for regeneration or for heating the ovens; but I know that the Snow setting is an economical type, and if I were asked to replace it with a better, I would not know just where to turn.

Q. But to get at the cost of gas in the holder you do not have to have reference to earnings, do you?

Q. If the cost of gas in the holder was part of the valuation problem, I would have attacked it; but I did not so consider it part of the problem of valuing the plant as a going concern.

(Noon recess.)

AFTERNOON SESSION.

WILLIAM W. RANDOLPH, *cross-examination resumed.*

By Mr. MATTHEWS.

Q. Did you make any inquiries as to whether the gas mains were under the street railway tracks in any part of the city? *A.* No, not further than to note where the railways crossed the streets.

Q. Some of the Company's gas mains run along under the street railway tracks in several of the streets, do they not? *A.* I cannot state whether they do or not.

Q. And I take it, therefore, that you made no inquiry as to the effect, if any, of electrolytic action from the street railway current on the gas pipes? *A.* I made that inquiry, but I did not inquire whether the pipe was laid directly under the track, and from such inquiry as I could make of Mr. Snow, who principally has to do with the streets, I could not learn that there was any special excess of electrolysis.

Q. Did you understand that the Company had had any trouble of that sort with its pipes at any period? *Q.* If they had I was not informed of it.

Q. You were not informed of any such trouble? *A.* If there was any trouble I was not informed of it. I do not know of any serious trouble.

Q. In making up your estimates of the value of the gas machinery at the works — the holders and the apparatus — did you make inquiries of manufacturers of gas appliances at the time you made this paper up? *A.* What the value of this particular holder is?

Q. No, what the value of similar holders would be, or similar apparatus, whatever it might be. *A.* I have that class of data in our office showing the cost of holders in different parts of the country, and we are in the market occasionally for purchase of holders of different sizes, so that all of that general information was available to me; and I used that and ex-

amined the holder and its general condition as I found it, and upon that based my judgment of its present value.

Q. And would the same explanation be true of the other apparatus and machinery, as well as the holders? *A.* Yes. I take an example, possibly, of the exhausters; I examine them and find that they are working and in good condition. I am in communication frequently with the manufacturer of those exhausters, and I take occasion to ask him when they were last in his shop for repairs,—renewal,—and he states that the exhausters were sent to his shop for repairs and renewals within, I think, three years; that he renewed all parts of them that needed renewal; and upon such information as that I base my judgment on the value of the exhausters in place.

Q. Are you giving a hypothetical illustration, or are you stating exactly what you did with the exhausters in this case?

A. I am stating exactly what I did with these particular exhausters.

Q. Now you say you had data relating to the holders, for instance. Are those data with you now? *A.* They are not.

Q. Where are they? *A.* They are in our office, and they constitute part of what I consider confidential information that I would not, even if I could recollect it, feel at liberty to take holders from different towns and say that such a holder in such a place cost so much.

Q. That is, even if you had those data here, notwithstanding the fact that they were used by you in forming this estimate of value, you would not feel at liberty to produce them?

A. I would hardly feel that I had a right to take values that are received in a confidential way and —

Q. How do you mean, received in confidence? *A.* Why, information that I get as an officer of our gas company or connected with the gas company; I would not feel at liberty to take that and advertise it abroad—the costs of our different pieces of apparatus; but I can take that information and it helps me to form my judgment of present values of apparatus.

Q. That is, you would feel at liberty to use the information

as a basis for your opinion, but you would not think that this Court would be at liberty to see the information on which you base your opinion; that is about the size of it, isn't it? *A.* I don't know whether it is putting it exactly the way I would put it.

Q. That is what it amounts to, isn't it? *A.* I say that I acquire information in consulting capacities with other gas companies, and that puts me in a position to be a fair judge of values; but I do not consider myself at liberty to state that a specific holder in a specific town cost a certain amount of money. I feel, though, that having that information at hand puts me in a good position to judge of values.

Q. Do you know any gas holders in Massachusetts that have cost the amounts or anything like the amounts that you have set down in that schedule; that is, taking the capacity into account? *A.* No, I have no data on a holder put up in Massachusetts. A holder put up in Massachusetts would not cost necessarily any more than a holder put up in Pennsylvania.

Q. How do you know? Did you ever inquire into the price of holders manufactured in Massachusetts? *A.* No, I have never gotten bids from any manufacturer of holders in Massachusetts.

Q. There are such, are there not? *A.* Yes, I think Davis & Farnham manufacture holders.

Q. Who are Davis & Farnham? *A.* Personally, I know nothing of the firm, except that they advertise as manufacturers, I believe.

Q. Do you know of them by repute? *A.* Yes.

Q. What do you know of them by repute?

Mr. BROOKS. How is that competent?

Mr. MATTHEWS. I will withdraw the question for the moment.

Q. You knew that Davis & Farnham were manufacturers of gas holders in Massachusetts? *A.* Yes, that is the only firm that I can think of that are located up in this part of the country.

Q. They make gas appliances generally, don't they, too, as well as holders? *A.* So I have understood.

Q. Are they the only firm of manufacturers in Massachusetts — the only firm of gas works manufacturers in Massachusetts, as far as you know? *A.* At the moment I do not recall the names of others.

Q. But you made no effort to ascertain what their prices for similar holders to those of the Holyoke Water Power Company would be? *A.* No more effort than I would have to have gotten the prices of R. D. Wood, Darley & Fowler, or I might say the Continental Iron Works.

Q. That is, you did not get prices from manufacturers upon any of the machinery that you valued in this case for that purpose? *A.* I did not, because I was not valuing a new plant; I was valuing a plant as I found it.

Q. Well, you would not value any plant as you found it higher than you would a new plant, would you? *A.* No.

Q. Therefore if you got — *A.* Not a new plant that was as good as the —

Q. Of equal capacity and efficiency. Then if you got the price at which you could buy holders and other gas machinery new, you would get the maximum value for the corresponding parts of the present plant, would you not? *A.* If I went into the market last January I would get one figure for holders; if I went into the market to-day I would get a higher figure; and that value of the holder, new, fluctuates from time to time with the price of the material.

Q. That is your answer? Is that the best answer you can give? *A.* Doesn't that answer the question? If it does not, I will try again.

Q. I rather thought not, but perhaps it is the best you can do. You say that your valuation would differ according to the time at which you took it; I understood you to say that. *A.* No, I said that the value of a new holder would vary — fluctuate from time to time, owing to the price of material and to the desire of the respective manufacturers to get the job.

Q. Would not your valuations fluctuate from time to time

in correspondence with the trade price? *A.* I would use my general knowledge of the market value of the thing I was valuing to arrive at my conclusion.

Q. Well, my question was whether your valuation of a gas works would fluctuate with the market value of its component parts new? Can't you answer that simply yes or no? *A.* Yes, I think that I should answer that yes.

Q. Then isn't it necessary for you, in order to form a valuation on your theory, to know what the price of machinery is, new, at the time at which you make your valuation up? *A.* I can ascertain what the value of machinery is, new, and I base my — I form a judgment as to the value of the machine as I see it, the condition that it is in.

Mr. MATTHEWS. Won't you read my question, Mr. Stenographer?

(Question read.)

Q. Now, that question, it seems to me, can be answered yes or no. *A.* I am in a position to know the value of the machinery, new.

Q. Well, you say you are in a position; were you in a position at the time that you made this valuation up? *A.* Yes.

Q. What was the value of holders corresponding to these three in capacity at the time that you made this valuation up; that is, the price of such holders, new? *A.* I think I answered that question pretty fully before, in saying that I did not value this plant, new, and then take a specified depreciation off of it. I examined the machinery and formed my best judgment as to what it was worth as a going plant when I looked at it.

Q. It is true that you said that; but I also understood you to say a moment ago that you did know as a matter of fact at the time you made your figures up what the new value, so to speak, of gas holders of corresponding capacity to those in question was, and now I ask you what that price was. *A.* I used that knowledge in enabling me to —

Q. No, no; excuse me. I want you to tell me, if you can,

what the cash value of new holders of corresponding capacity to those involved in this case was at the time you made your figures of value up, if you knew it then and remember it now.

A. I do not remember it now.

Q. Did you have any written data of those cost prices? *A.* I had tabulated prices and cost of past work that has come under our knowledge.

Q. Where are those? *A.* Those are in our office files.

Q. Do you know any holder of the capacity of 150,000 cubic feet that has cost \$6,500 to erect, exclusive of the tank? *A.* How much?

Q. \$6,500. *A.* I cannot tell you from memory. I could pick out quite a number of them, though, from different places in the country if I was in a place where I had the proper records.

Q. And those proper records you have at home? *A.* Yes.

Q. Those are the confidential records you spoke about a moment ago? *A.* Yes.

Q. And these statements that you have just been making about the holders apply, with the proper qualifications, to the other machinery involved in this case which you valued? *A.* Yes.

Q. Now I should like to ask you to produce all the data, memoranda, correspondence, and other information, whether you call it confidential or not, which you used as a basis for forming your valuations in this case. I do not mean to ask you to produce it now, because I know you cannot, physically. *A.* I will have to decline to do that, because I do not think I am at liberty to produce the confidential records of the office. That would have to be referred to Mr. Humphreys. If he elected to bring his files down here and present them to you, he could do so.

Q. Will you refer the question to Mr. Humphreys, and ask his permission to bring them? *A.* I can, if the Court so wishes it.

Mr. MATTHEWS. We address that request to the Court.

Mr. GOULDING. We suppose that such a request is wholly

improper and wholly—I will not say absurd, but certainly what any other gas holders cost could not be admissible if the evidence was here. He could not put in the cost of a gas holder somewhere else, and I do not suppose that an expert is bound to produce all the memoranda whence he derived his knowledge of the subject-matter, and expose all his transactions—all the transactions of his life—which may be undoubtedly the sources of his information. If they were to specify any particular thing that they wanted, why, your Honors could deal with it; but can your Honors make a suggestion or request that he shall produce all the memoranda of transactions which afford him such information as to enable him to give an opinion upon this subject? I submit not. Of course it is unnecessary to say that it would include the records of the entire office of his firm and of any other firm that he has been connected with.

THE CHAIRMAN. We shall not pass any order on that subject, Mr. Matthews. You can have the benefit, if it is a benefit, of the fact that it is not produced; but we have no power to deal with it.

MR. MATTHEWS. I do not understand that the Commission has the legal power to order the witness to do anything. He is not within the jurisdiction of the Court, for one reason.

THE CHAIRMAN. What, sir?

MR. MATTHEWS. He is not personally within the jurisdiction of the Court when he leaves this State, and I do not know to what extent the powers of this Commission go in compelling the production of papers.

MR. BROOKS. We raise no question of jurisdiction.

THE CHAIRMAN. We will deal with what comes in, Mr. Matthews, and will give you the advantage of any argument or conclusion that you may draw from the fact that it is not produced.

Q. Did you make this valuation in the month of December, 1898? A. After your asking me the question this morning, I tried to recall better the dates that I was up here, and I am still not able to fix upon the absolute dates that I

was here, but I am quite sure I came up some time early in December to make a general examination of the plant, and my examination was spread over quite a little period, coming up from time to time.

Q. You came up first in November? *A.* No, December, I think. That is the best of my recollection.

Q. I understood you to say to Mr. Brooks this morning that your values were made as of that period. *A.* My values were made as of about January.

Q. Now, was there or was there not any fluctuation or difference in the value of the different parts or the whole of this plant, between January, 1898, and January, 1899, the time when you made your figures up? *A.* I understand you to ask me whether the values a year apart differed.

Q. Whether the values of those two periods, a year apart, would differ? *A.* Well, the material was higher in January, 1899, than it was in January, 1898.

Q. Whether your valuation differed? *A.* I only made one valuation, and that was in 1899.

Q. Was there any difference in the prices of materials that go into a gas plant in January, 1898, as compared with the prices at the time at which you made up your figures, which would have resulted in a different, a higher or lower, valuation, if you had done this work in January, 1898? *A.* Substantially, as I recollect the prices of material, there was no very great difference one way or the other, in the prices. That is my recollection of it, that there would be no very substantial change in the valuation.

Q. Can you state what the price of cast iron pipe was at the time you made this valuation in January, 1899? *A.* That was about, approximately, in the neighborhood of \$19, I think.

Q. A ton? *A.* Yes.

Q. You mean a short ton? *A.* That would be a long ton.

Q. That is the price in January, 1899? *A.* As I recollect it.

Q. And what was the price of cast iron pipe per long ton in January, 1898? *A.* I don't recollect what the value would be.

Q. You don't remember that. You don't think there was much difference? *A.* I don't think there was very much difference.

Q. Would there be any difference between those two dates in the value of the material that would go into these holders and other gas machinery? *A.* I don't think there would.

Q. And you are sure, are you, that \$19 a long ton was the current market price of cast iron pipe in January, 1899? *A.* No, I won't make that statement as positive without looking up the price list to see what the current price was. That is merely as I recall it. It might have been different from that, but that is my recollection.

Q. Did you use such price list in making your figures up? *A.* I took into consideration the current value of cast iron pipe at the time I was valuing the property.

Q. The current market price of it. Do you mean that? *A.* Yes.

Q. And did you do the same with respect to the value of the iron that would be used for holders and other appliances? *A.* Yes, in a general way. I will qualify that by saying that I do not take into consideration the cost per ton of pig iron when I am valuing an exhaustor, from month to month, because those little fluctuations in the trade price of pig iron do not affect the finished product.

Q. These data which you decline to produce also covered the cost of laying mains, or the value of mains laid in the ground, did they not? *A.* Yes. That is what enabled me to form a judgment.

Motion to strike out Certain Testimony.

Mr. MATTHEWS. We now desire to move that all the testimony of this witness relating to the valuation of the gas mains, the gas holders and all the machinery at the gas works, be struck out of the case, leaving to stand his testimony re-

specting the value of the buildings which he actually saw and physically inspected.

THE CHAIRMAN. Upon what ground?

Mr. MATTHEWS. On the ground that he declines to produce the data which he used to make these figures.

THE CHAIRMAN. It is a novel proposition.

Mr. MATTHEWS. We desire to make the motion and to argue it, not at great length, and to ask the ruling of the court on it.

THE CHAIRMAN. We should like to hear you.

Mr. MATTHEWS. In respect to the mains, for instance, this witness admits that he did not value those gas mains in the ordinary way, by taking the cost of the material and the cost of laying, adding them together, and deducting whatever should be a fair deduction on account of the fact that they had been some time in the ground and by reason of any other considerations that might occur to him as proper. But he has made a lump estimate, a guess estimate, of the value of these mains as a gas distributing system; and the only data, the only material, which he has admitted that he used for that purpose, are these same so-called confidential records. Then the same thing is true of his valuation of the holders and the other gas machinery, as distinguished from the buildings. He made no inquiries of manufacturers, which is the usual thing for an expert to do when he is asked to value machinery. He cannot state the actual cash price of the machinery at that time, if new, but he used there again this confidential secret mass of information, and that is all he used. The whole strength and stability of this fabric of valuation which he has built up rests upon these data which he calls confidential. We have no opportunity to ascertain whether this witness is telling the truth or not when he says that a gas holder is worth \$6,500 — the largest holder, for instance. We have no means of cross-examining him upon it. If he had gone about that valuation in the ordinary way he would have been able to testify that holders of that capacity cost such and such a sum, more or less. And, if more, he

might make some allowance for age and depreciation. But he made no such inquiries and has no such information, and his whole opinion is based upon these data, records, or information which are in the archives of the firm to which he belongs, and which he considers necessary and essential for the formation of his opinion, but too confidential to be produced in a court of law. We submit that the evidence of the witness should be struck out, to the extent that he has admitted it to be based necessarily upon these secret archives.

So far as his valuation of the buildings goes, although we may be inclined to criticise that as high, we wish to be entirely fair to the witness, and we do not make any motion of this sort in respect to that testimony, because he saw the buildings, and could see them, and valued them as they were; and that is all the information that he used. But, in respect to all the rest, he is using a mass of data, records, and information which he declines to produce in court.

THE CHAIRMAN. Before hearing the other side, I would like to ask you this question. Didn't you ask this witness whether he would consult with Mr. Humphreys before having it determined whether these things should be brought here or not, and didn't he say he would, and therefore isn't your motion premature?

Mr. MATTHEWS. I don't know but that is so, and in that aspect of the case I will postpone the motion. In fact, I had so supposed myself, and therefore asked that question of the witness; but the subsequent course of the discussion seemed to me to put the witness and the Company both in the attitude of declining point-blank to produce this information. If I have misunderstood their attitude, I will postpone the motion until this witness can consult with his superior in the firm.

Mr. GOULDING. We would suggest that the motion, if it is to be made, should specify what data this witness refuses to produce, in order that the Court may pass intelligently upon it.

THE CHAIRMAN. I think, perhaps, Mr. Matthews, you had better postpone this motion till after it is determined.

Mr. GOULDING. If this is a matter seriously before this Court, I should like to have a specification of the data that this witness declines to produce, so that the matter can be brought intelligently before the Supreme Court when this report is made,—what data he declines to produce. As we understand it, he declines to produce no data whatever, unless it is the data of his whole life, the business transactions of his whole life. If this is what they mean, let them say so, if this witness refuses to produce all the evidence of any contract that he has ever made or known about.

THE CHAIRMAN. Mr. Matthews, you had better reduce your motion to writing, or specify it in some other way, so that it can go on the record.

Mr. GREEN. As I understand it, Mr. Brooks, as the witness went on with the valuations that he put upon holders and upon the price of laying mains, he said there were certain data at home in his office which he had used. Of course, we do not know precisely what he used, but evidently there were prices of various things from which he got his knowledge, which he supplies here, and he used them, and they are things which it seems to us that he should produce, the things of which he has availed himself in the course of this testimony, the figures, plans, estimates, or whatever they are, the data from which he gets his information. In discussion of the matter with Mr. Matthews it seems to us that we are limited to those sources. For instance, he says he does know what holders would cost in some places. Now, what are those places and figures? Those are the data, the figures, and facts which he has got, which he says he couldn't remember; but he had them and used them at home and made up these figures which he has employed in regard to the laying of mains. He said he had estimates and figures, facts, cost price, which he knew. We do not know the source; but whatever it is, that is the source, and he qualifies here to give your Honors estimates on the basis of those facts.

Mr. GOULDING. He said he had verbal information.

Mr. MATTHEWS. He said records and data.

Mr. GOULDING. Describe them, so that we can issue a warrant, if necessary, to search for them. Is it to be said that because a witness says, I have got contracts in writing, or otherwise, I have known about the prices of this and that, and from my knowledge of those things, and with my wide experience in this business, I know the prices of these things, that he is thereupon immediately to produce the data, or his evidence is to be stricken out? What are my friends talking about? Will they put in writing their specification of the data so we can discuss the question intelligently?

THE CHAIRMAN. I think that is the proper thing to do.

Mr. MATTHEWS. That is what we propose to do. The witness has spoken of records and prices that he has in his office. We do not need to ask him another question to reduce our motion to writing, so far as the specification is concerned; but I don't know but this whole matter is premature, before the witness has done what evidently the Court thought he was going to do, and ask his superior officers whether he could produce this material or not.

Mr. BROOKS. I do not know as your Honors care to hear anything in addition, but I desire to suggest this,—that everything my friend has brought out was brought out in cross-examination, and I suppose it is well known that irrelevant testimony brought out on cross-examination cannot be used in this way. I do not suppose any thing that he said in the way of figures, of what something cost, could be used as evidence.

Mr. MATTHEWS. We would rather postpone it until the witness has seen Mr. Humphreys. But if the witness is going to leave the State, and is not coming back after he has seen Mr. Humphreys,—

Mr. BROOKS. He is going away this afternoon, as soon as he gets through.

Mr. MATTHEWS. I should desire to be understood as making a motion which we will afterward reduce to writing, if the Court desire, in case this witness should not return with the data for which we call.

Mr. BROOKS. If they will reduce their motion to writing we will determine.

THE CHAIRMAN. Is the witness going to return?

Mr. BROOKS. He will, if he is needed.

Mr. GOULDING. Then why not let the thing subside?

Mr. BROOKS. I think myself that is a very good suggestion.

THE CHAIRMAN. We will protect your rights, Mr. Matthews.

Mr. GREEN. Of course, I desire in this connection to state that the whole qualification of this witness should not be some knowledge of what somebody else has told him.

Mr. BROOKS. I think the entire argument addresses itself to the weight to be given to this witness's testimony. If the Court think he is not qualified they will throw out his evidence.

Mr. GOULDING. If they make their motion on the ground that the witness is not qualified, I hope they will put it in so we will understand it.

THE CHAIRMAN. We understand that the witness will return at some future day.

Mr. BROOKS. Yes. I have not fixed any day, but I think it will be so left that we can call him.

THE CHAIRMAN. Mr. Brooks, have you any questions to ask?

Mr. BROOKS. Yes, I have several.

Re-direct.

By Mr. BROOKS.

Q. As I understand you, in the valuation of the various physical mechanisms and features that make up this plant, you took them as they were? A. I did.

Q. At the time that your valuation was made? A. Yes.

Q. That is, you did not take a new machine, and then depreciate from the cost price of the new machine, to get the market value of the machine that you were estimating the market value of? A. No.

Q. You exercised the judgment which came to you through your experience to be applied to the thing or mechanism as it was at the time when you examined it? *A.* Yes, sir.

Q. Well, now, talking about the housing of holders, if that is a proper expression, which would last longer, a housed holder or an unhoused holder? *A.* In my judgment, the housed holder would have the longest life.

Q. And which would cost the more to keep in repair, the housed or the unthatched and uncovered holder? *A.* The unthatched and uncovered holder would cost the most.

Q. And which would be the more reliable of the two? *A.* The housed holder is not subject to the dangers of wind, and in that way would be less subject to the elements of snow and wind pressure that would have to be guarded against, and would be the most reliable.

Q. And this, as I understand you, is a plant that has been tested by use, and machines that have been tested by use are of more value than an untested machine? *A.* In my judgment they are. The element of uncertainty is out.

Q. You have been asked with reference to leakage per mile, and leakage in accordance with the amount sold. As I understand you, you say the truer or better test is the leakage per mile of main. Is that so? *A.* In my judgment that represents the fairer way of getting at the leakage.

Q. That is, the gas in your pipes is leaking whether it is sold or not? *A.* It is leaking whether it is sold or not. The returns of leakage are possibly misleading.

Q. In what way? *A.* In that they represent all unaccounted for gas.

Q. Does leakage, normal leakage, show any defective condition of the pipe? *A.* It does not show any unusual condition of the pipe.

Q. That is, it is the ordinary condition of normal leakage? *A.* Normal leakage.

Q. Well, is there gas unaccounted for that is not to be attributed to leakage? *A.* Yes, there is a shrinkage due to

condensation of the gas in the mains, which sometimes takes place.

Q. Yes, and my friend suggests temperature? *A.* Difference in temperatures of the station meter and the consumers' meters.

Q. So when you speak of leakage per mile, or leakage per amount sold, that means gas unaccounted for from many causes? *A.* Yes, I think that is the heading it comes under in the Commissioners' report.

Q. And the cost of laying mains, and the cost of the various physical features of a gas plant, are substantially the same in the various sections of the country, are they not?

A. I find it substantially so.

Q. And the cost of laying small pieces is greater than the cost of laying many and extended mains? *A.* Yes, sir.

Q. My friend asked you if you did hear Mr. Snow testify that he did not know when the gas pipes were put in. Did you hear him testify that substantially all the gas pipes, with the exception of five miles or such a matter, had been put in since his connection with the plant in 1875? *A.* I won't say certainly that I recollect his testifying to that effect, but I recollect that that is what he told me in a general way.

Q. You didn't burrow, as I understand it, like a mole under the ground, all the way along all the various gas pipes, and tap every section? *A.* I did not.

Q. And is that usual in order to find what the fair market value of a main is, to do any such thing? *A.* It never has been customary in any work of the kind that I have been on before.

Q. Finding out what the normal leakage is, or what the normal amount of gas unaccounted for is, teaches you what the condition of the pipe is. Is that correct? *A.* That is the means we have of judging the condition of the pipe.

Q. You speak of an exhauster which you understood had been repaired. There are two exhausters in this plant, as I recollect? *A.* Yes, sir.

Q. Did you learn how old the other exhauster was? *A.* I may have learned it, but from memory I couldn't say.

Q. Was it, or was it not, comparatively new? *A.* As I recollect it, they were neither of them old, but as explained before, they had been sent to the shop, and parts that had worn were renewed.

Q. Did you understand that the two exhausters had been sent to the shop? *A.* I understood so.

Q. I want to ask you whether or not the price of gas mechanisms has risen in value since January of the present year? *A.* The price of iron has risen.

Q. And very materially risen. I want to ask you with reference to the price per long ton of gas pipe that you have given. Is that the price in New York or Holyoke? *A.* That would be at that time the price, I should judge, in Holyoke, subject to the qualification that my memory may be at fault in regard to it.

Q. Take, for instance, 3 and 4-inch pipe, what would you expect to get for a ton of 2,240 pounds, which I believe is a long ton? *A.* The small sizes run as a rule at a little higher price. I think it is probably that to-day.

Q. I am talking now about January, 1899, when you made your estimate. *A.* I think there would be a marked difference, but just how many dollars per ton I do not exactly recall.

Q. Now of what material are all the wearing parts of your water gas plant? *A.* The wearing parts are composed of iron and brick.

Q. Fire brick? *A.* Fire brick.

Q. And, of course, renewed periodically? *A.* When they give out, they usually pass under repairs.

Q. Did you learn whether or not the retort house, instead of being built in 1875, was built in 1884?

MR. MATTHEWS. That is a very leading question, Mr. Brooks.

MR. BROOKS. That is not leading. I asked him whether he discovered.

THE WITNESS. Under cross-examination I said I thought it was built about twenty years ago.

Q. Well, it don't make any difference. *A.* I may have made a mistake in the date.

Mr. MATTHEWS. The counsel mentioned the other year. If he had put the question the other way it would not have been leading.

Mr. BROOKS. It may be stricken out.

Mr. MATTHEWS. No, the witness has answered it to our satisfaction.

By *Mr. BROOKS.*

Q. Upon what does the size of the holder house depend?

A. I should say the size of the holder.

Q. Upon what does the size of the holder depend? That would be a better question. *A.* The size of the holder is determined as a rule by the output of the works.

Q. Well, now, in cases where the holder is not housed, what is the reason for it, as a matter of your experience? *A.* The reasons for not housing them?

Q. Yes. *A.* Principally from the standpoint of economy. The very large holders in the country become too expensive to house.

Mr. BROOKS. That is all I want to ask.

By *Mr. MATTHEWS.*

Q. Do you know how much cast iron pipe has increased in price since January, 1899? *A.* I do not.

Mr. MATTHEWS. I think that is all, subject to the question that has been raised respecting data.

The schedule by the witness Randolph was put in evidence, the same being as follows:—

DETAILED STATEMENT

OF THE

GAS PROPERTY OF THE HOLYOKE WATER POWER COMPANY
HOLYOKE, MASS.,*And Estimate of Values of the Same as found on Examination.*

SUMMARY.

| | |
|---------------------------------------|---------------------|
| GAS HOLDERS | \$65,020.00 |
| MACHINERY | 58,600.00 |
| TAR, OIL, AND AMMONIA TANKS | 6,490.00 |
| YARD CONNECTIONS, ETC. | 3,824.75 |
| STREET MAINS | 80,714.82 |
| METERS | 20,337.10 |
| SERVICES | 20,000.00 |
| STOCK OF PIPE AND SPECIALS | 4,637.45 |
| BUILDINGS | 30,450.00 |
| REAL ESTATE | 50,153.40 |
| | <u>\$340,227.52</u> |

GAS HOLDERS AND HOLDER TANKS.

| | | |
|---|------------|--------------------|
| One single lift holder, 60 ft. 0 in. x 20 ft.; capacity,
60,000 cu. ft. | \$3,000.00 | |
| One brick holder tank | 8,000.00 | |
| One brick holder house, 63 ft. 0 in. x 19 ft. 9 in. | 3,600.00 | 14,600.00 |
| One double lift holder, 63 ft. 0 in. x 38 ft.; capacity,
115,000 cu. ft. | \$5,700.00 | |
| One brick holder tank, 60 ft. 0 in. x 21 ft. | 8,640.00 | |
| One brick holder house, 73 ft. 0 in. x 43 ft. | 6,080.00 | 20,420.00 |
| One holder, 87 ft. 0 in. x 26 ft.; capacity, 150,000 cu. ft., | \$6,500.00 | |
| One brick holder tank, 89 ft. 0 in. x 28 ft. | 16,000.00 | |
| One holder house, 100 ft. 0 in. x 34 ft. | 7,500.00 | 30,000.00 |
| | | <u>\$65,020.00</u> |

MACHINERY.

| | |
|---|------------|
| Four purifier boxes, 15 ft. x 20 ft. x 3 ft., connections
and foundations | \$7,080.00 |
| Two station meters, 8 ft. 0 in.; capacity, 500,000 cu. ft.
per day each; connections and foundations | 4,700.00 |
| One No. 5 McKenzie Exhauster, connections and founda-
tions | 935.00 |

| | |
|--|--------------------|
| One No. 6 McKenzie Exhauster, connections and foundations | \$1,060.00 |
| Exhauster countershafting and belting | 75.00 |
| One rectangular combined condenser and tar extractor, 5 ft. x 13 ft. 9 in. x 12 ft. 6 in., foundations and connections | 1,000.00 |
| One condenser, 6 ft. 8 in. x 20 ft. 3 in., foundations and connections | 2,150.00 |
| One standard scrubber, 6 ft. 3 in. x 8 ft. 6 in.; countershaft, belting; foundations and connections | 3,050.00 |
| Two 125 horse power Manning boilers, steam piping, foundations and connections | 2,500.00 |
| Two stacks of coal-gas benches, containing ten benches of six retorts each; two benches are not filled with retorts; the iron work is complete for nine benches; present capacity, 400,000 cu. ft. per day | 18,000.00 |
| One water-gas apparatus, 650,000 cu. ft. daily capacity; complete, including iron operating floor, elevator, pumps, blowing plant, and foundations | 12,100.00 |
| One coal conveying plant for taking coal from railroad tracks, and delivering it into coal shed, including pit under tracks; rated capacity, 40 tons per hour | 2,500.00 |
| One 12-in. water wheel and pit | 500.00 |
| One 15 horse power vertical exhauster engine | 250.00 |
| One 10-light dynamo | 100.00 |
| Two sets closets, bath-tubs, and lockers | 150.00 |
| One 12-in. automatic governor and by-pass connect | 550.00 |
| Office furniture, photometer and gauges | 700.00 |
| Coal buggies, tools, and tackle | 950.00 |
| One horse, buggy, sleigh, harness, and blankets | 250.00 |
| Total machinery | <u>\$58,600.00</u> |

TAR, OIL, AND AMMONIA TANK AND WELLS.

| | |
|---|-----------------|
| One brick tar well, 28 ft. 0 in. x 11 ft. 6 in. | \$700.00 |
| " " " " 8 ft. 6 in. x 10 ft. | 140.00 |
| " " " " 49 ft. x 14 ft. x 8 ft. | 1,140.00 |
| " " " " 20 ft. x 29 ft. x 12 ft. | 1,010.00 |
| One steel oil tank, 50,000 gals. capacity, including foundations | 2,700.00 |
| One iron oil tank, 5 ft. 0 in. x 20 ft.; capacity, 2,900 gals.; underground | 200.00 |
| One iron oil tank, 7 ft. 0 in. x 23 ft.; capacity, 6,500 gals.; underground | 300.00 |
| One iron ammonia tank, 7 ft. 0 in. x 23 ft.; capacity, 6,500 gals.; underground | 300.00 |
| Total tanks and wells | <u>6,490.00</u> |

YARD CONNECTIONS, OIL, WATER, AND DRAIN PIPE AT WORKS.

| | | |
|----------------------------------|--|-------------------|
| 765 feet of 16-in. pipe @ \$2.25 | | \$1,721.25 |
| 850 " " 12-in. " " 1.50 | | 1,275.00 |
| 640 " " 6-in. " " .80 | | 512.00 |
| 465 " " 4-in. " " .50 | | 232.50 |
| 210 " " 2½-in. " " .40 | | 84.00 |
| | | <u>\$3,824.75</u> |

STREET MAINS.

Paving over mains:

| | | |
|--------------------------------------|------------|---------------|
| 14,516 linear feet granite block | | |
| 3,817 " " block asphalt | | |
| 560 " " tar asphalt | | |
| 3,714 " " brick | | |
| 4,604 " " macadam | | |
| <u>27,211</u> | @ 30 cents | \$8,163.30 |
| | | 8,163.30 |
| 440 linear feet 16-in. main @ \$1.60 | | 704.00 |
| 10,475 " " 12-in. " " 1.15 | | 12,046.25 |
| 5,964 " " 8-in. " " .80 | | 4,771.20 |
| 32,033 " " 6-in. " " .60 | | 19,219.80 |
| 28,781 " " 4-in. " " .40 | | 11,512.40 |
| 68,219 " " 3-in. " " .30 | | 20,465.70 |
| 1,953 " " 2½-in. " " .20 | | 390.60 |
| 7,895 " " 2-in. " " .17 | | 1,342.15 |
| 2,824 " " 1½-in. " " .15 | | 423.60 |
| 6,776 " " 1½-in. " " .12 | | 813.12 |
| 3,127 " " 1-in. " " .10 | | 312.70 |
| <u>168,487</u> | | |
| 1 bridge over first level | | <u>550.00</u> |
| | | 72,551.52 |

METERS.

| | | List. | |
|------------------|-------------|--------|-------------|
| 2 light | 1 meter set | @ | |
| 3 " 2,140 meters | " | \$7.50 | \$16,050.00 |
| 5 " 89 " " | " | 9.50 | 845.00 |
| 10 " 84 " " | " | 12.00 | 1,008.00 |
| 20 " 42 " " | " | 16.50 | 693.00 |
| 30 " 30. " " | " | 22.50 | 675.00 |
| 45 " 25 " " | " | 33.00 | 825.00 |
| 60 " 10 " " | " | 45.00 | 450.00 |
| 80 " 4 " " | " | 62.00 | 248.00 |
| 100 " 8 " " | " | 75.00 | 600.00 |
| 150 " 8 " " | " | 115.00 | 920.00 |

RANDOLPH'S SCHEDULE — GAS.

417

| | | | | |
|--------------------------------------|----------------------|--------------------|--------------------|-------------|
| 200 light | 7 meter set | @ 160.00 | \$1,120.00 | |
| 250 " | 1 " " | " 225.00 | 225.00 | |
| 300 " | 7 " " | " 275.00 | 1,925.00 | |
| 400 " | 1 " " | " 325.00 | 325.00 | |
| 2,457 meters set. | | | \$25,909.00 | |
| 25% discount | | | 6,477.00 | |
| | | | <u>\$19,432.00</u> | |
| 3 light | 74 meters in stock @ | \$7.50 | \$555.00 | |
| 5 " | 20 " " " " | 9.50 | 190.00 | |
| 10 " | 6 " " " " | 12.00 | 72.00 | |
| 20 " | 2 " " " " | 16.50 | 33.00 | |
| 30 " | 6 " " " " | 22.50 | 135.00 | |
| 45 " | 1 " " " " | 33.00 | 33.00 | |
| 300 " | 1 " " " " | 275.00 | 275.00 | |
| 110 meters in stock. | | | \$1,293.00 | |
| 30% discount | | | 387.90 | |
| | | | <u>\$905.10</u> | \$20,337.10 |
| 2,000 services @ \$10 each | | | | 20,000.00 |

STOCK OF PIPE ON HAND AND SPECIALS.

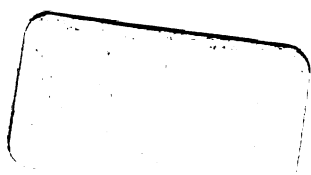
| | |
|--|-----------------|
| 62 feet of 16-in. pipe @ \$1.20 | \$74.40 |
| 53 " " 15-in. " " 1.10 | 58.30 |
| 1,060 " " 12-in. " " .76 | 805.60 |
| 2,603 " " 6-in. " " .33 | 858.99 |
| 534 " " 4-in. " " .19 | 101.46 |
| 976 " " 3-in. " " .13 | 126.88 |
| 22,333 lbs. cast iron fittings @ 2.5 cents | 558.32 |
| Four 3-in. gate valves @ \$6.50 | 26.00 |
| One 4-in. gate valve " 8.50 | 8.50 |
| Nine 8-in gate valves " 21.00 | 189.00 |
| 223 feet of 1-in. wrought pipe | |
| 368 " " 1-in. " " | |
| 6,183 " " 1-in. " " | |
| 4,705 " " 1 1/4-in. " " | |
| 86 " " 2 1/4-in. " " | |
| 111 " " 6-in. " " | |
| 377 " " 1/2-in. " " | |
| 1,987 " " 1/2-in. " " | |
| 4,530 " " 1 1/4-in. " " | |
| 2,839 " " 2-in. " " | |
| 10 " " 3-in. " " | |
| 66 brass cocks | 1,050.00 |
| 30 retorts, 15 in. x 30 in. x 9 ft. 3 in. | 780.00 |
| Total pipe and specials | <u>4,637.45</u> |

BUILDINGS.

| | |
|---|--------------------|
| One office building, 30 ft. x 20 ft.; 13 ft. to eaves; cellar; brick walls, slate and wood roof | \$1,400.00 |
| One building, 20 ft. x 114 ft.; 17 ft. to eaves; 8 ft. basement; slate and wood roof; containing old station meter and lime room. New station meter room, 25 ft. x 20 ft.; 24 ft. to eaves; slate on wood roof. Valve room, 11 ft. x 10 ft.; 12 ft. to eaves; slate on wood roof; brick walls | 3,400.00 |
| One building containing condensers and purifiers, 28 ft. x 144 ft.; 18 ft. to eaves; basement; slate and wood roof; brick walls | 5,200.00 |
| One building containing retorts and boilers, 63 ft. x 75 ft.; 22 ft. to eaves; blue stone flag paving; slate and iron roof; brick walls | 7,650.00 |
| One building containing water gas plant, 63 ft. x 51 ft. 6 in.; 27 ft. to eaves; brick paving; slate and iron roof; brick walls | 3,950.00 |
| One building containing engine and blower, 22 ft. x 30 ft.; 15 ft. to eaves; gravel roof; brick paving; brick walls | 800.00 |
| One building containing coal stores, 80 ft. x 70 ft. (about); 15 ft. 6 in. to eaves; tar asphalt paving; gravel and shingle roof | 6,800.00 |
| One store-room building, 40 ft. 3 in. x 60 ft., etc. (about); 11 ft. 6 in. to eaves; frame, shingle roof | 1,250.00 |
| Total buildings | <u>\$30,450.00</u> |

REAL ESTATE.

| | |
|--|---------------------|
| 19,066 sq. ft. of land at Bridge and Hamilton Streets, @ 40 cents | \$7,626.40 |
| 85,054 sq. ft. of land on which the gas works is built, @ 50 cents | 42,527.00 |
| Total real estate | <u>50,153.40</u> |
| Total gas property | <u>\$340,227.52</u> |





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